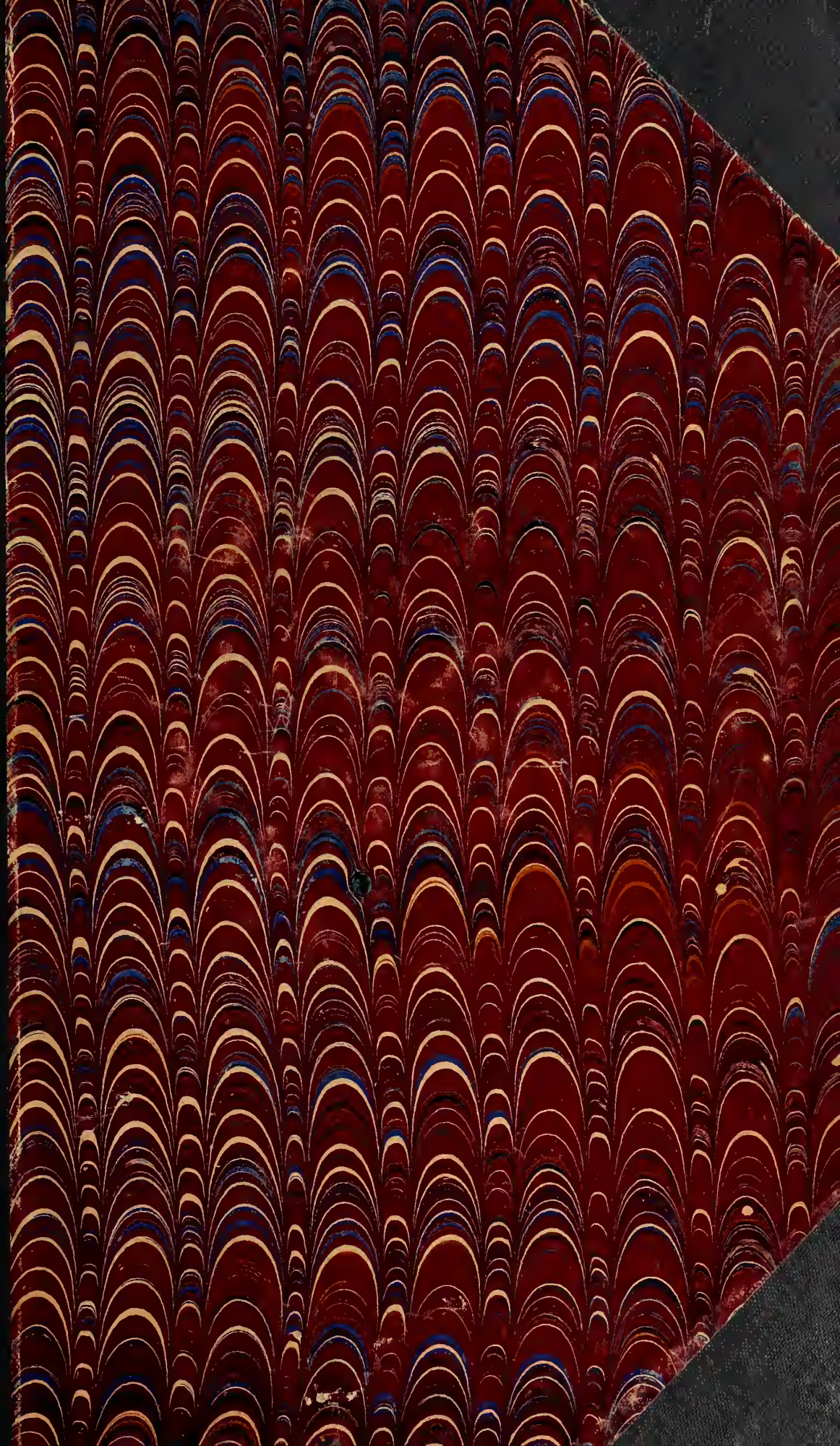



COUNTWAY LIBRARY



HC 3196 M

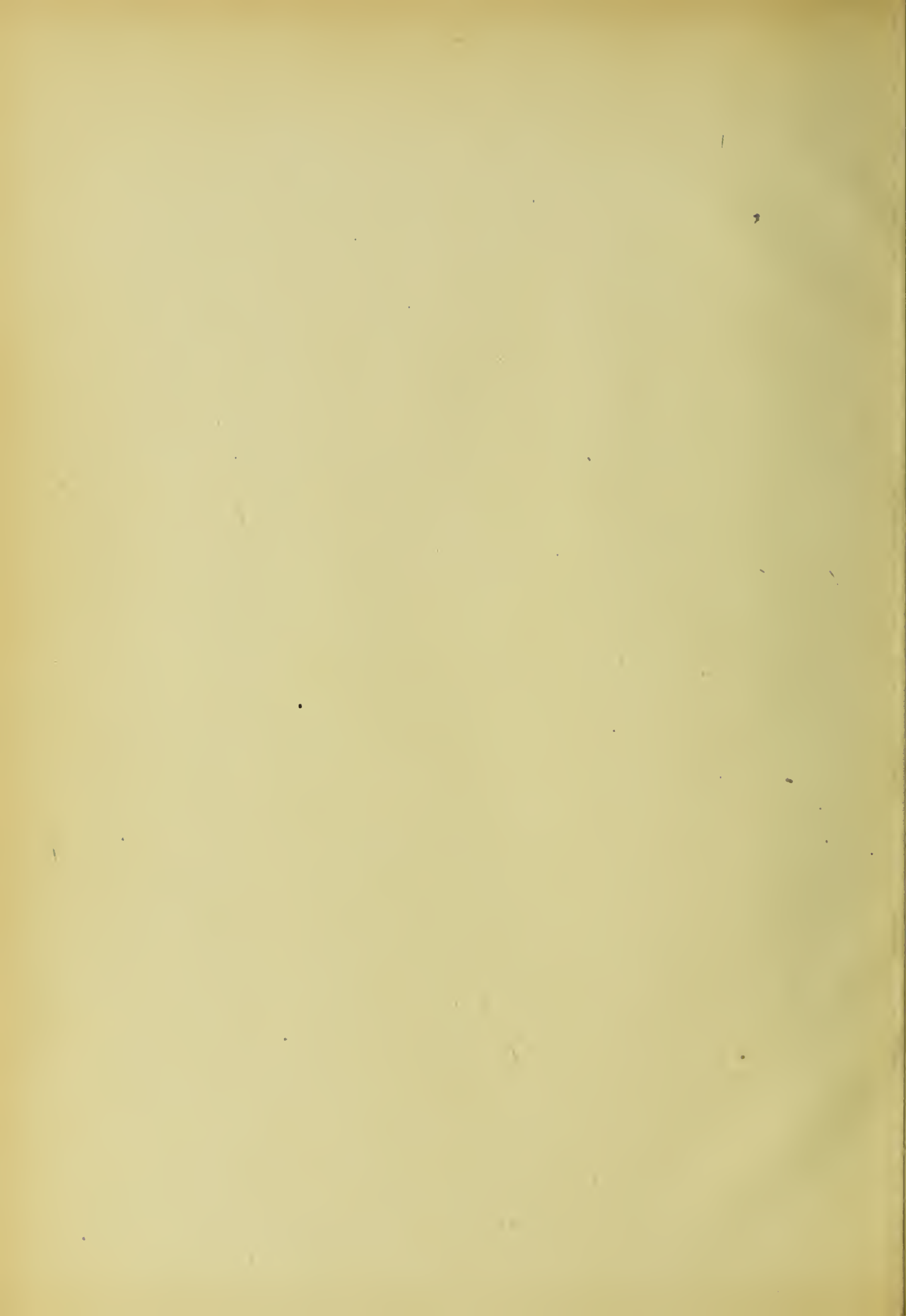


BOSTON
MEDICAL LIBRARY
& THE FENWAY



Digitized by the Internet Archive
in 2015

<https://archive.org/details/illinoismedicalj2819illi>



ILLINOIS MEDICAL JOURNAL

THE OFFICIAL ORGAN OF

The Illinois State Medical Society

PUBLISHED AT CHICAGO, ILL.

CLYDE D. PENCE, M. D., Editor

HENRY G. OHLS, M. D., Managing Editor



INDEX TO VOLUME XXVIII

JULY TO DECEMBER, 1915



INDEX TO VOLUME XXVIII

July to December, 1915

This is an alphabetical index of articles and discussions arranged by leading words. It contains occasional cross references. Names of authors and men who discussed the papers are also included. Details of society proceedings, including the names of papers

read, officers elected, etc., can be located in the proceedings under Societies. Editorials, News of the State, Marriages, Deaths, Public Health Items are classified under these headings. The subjects of editorials also appear alphabetically and are marked (E).

A	Page	Chemistry and Ureanalysis for Nurses.	Page	Practice of Medicine, Manual.	Page
Actions for Civil Malpractice (E).	456	Amoss	240	Stevens	240
Address. H. Douglas Singer, Kankakee	241	Diseases of Digestive Organs. Aaron ..	80	Senescence and Rejuvenescence. Child	400
Agar Culture Medium. J. E. Huher, Peoria	207	Diseases of the Nervous System. Jelliffe	320	Surgery, a Manual. Stewart.....	319
Alienists' and Neurologists' Meeting (E).....	43, 140, 304	Diseases of Skin and Eruptive Fevers. Schamberg.....	400	Surgery, Text Book for Students and Practitioners. Brewer.....	239
Allaben, J. E. Paper.....	17	Ductless Glandular Diseases. Falta.....	320	Tomorrow's Topic Series. Morris.....	320
American College for Surgeons, Latest Activity of. (E).....	455	Exercise in Education and Medicine. McKenzie	240	What to Eat and Why. Smith....	400
Anesthesia, Local vs. General in Nose and Throat Operation. J. C. Beck.....	231	Fractures and Dislocations. Preston.....	239	Boot, G. W. Paper.....	183
Anti-Typhoid Vaccination (E).....	137	Fractures, Treatment of. Scudder.....	159	Brachial Plexus Lesions, Etiology and Diagnosis. George W. Hall, Chicago	861
Atherton, C. C. Paper.....	374	Gastro-Intestinal Tract, Diseases of. Gant	160	Brawley, Frank. Paper.....	178
Auto Sparks and Kicks:		Gonorrhea, Treatment and Complications. Robinson.....	160	Brittin, Albert L. Address.....	81
Anti-Freezing Mixtures	459	Habits That Handicap. Towns....	319	Brown, E. J. Discussion.....	83
Carburetors	389	Infant Feeding Simplified. Den-net	159	Byford, Henry T. Paper.....	109
Car Cleaning.....	389	Industrial Health Hazards and Occupational Diseases in Ohio. Hayhurst	80		
Fool Proof Spark Plug.....	216	Internal Medicine, Outlines of. Farr ..	79	C	
How to Keep Hands Clean.....	216	Intervertebral Foramina in Man. Swanberg	79	Campbell, Grace H. Paper.....	90
Riding Tires Soft.....	311	Kaiser, Psychology of the. Prince.....	240	Cancer. Edward C. Franing, Galesburg	440.
Rim Remover, A.....	311	Marie Tarnowski. Chartres.....	399	Cancer Death Rate Increase in Chicago. Henry G. Ohls, Chicago....	37
Therapeutic Hints. Harry S. Gradle ..	51	Mechanism of Immigration. Williams	472	Carcinoma of Omentum. Charles J. Whalen, Chicago.....	84
Why Black?.....	389	Medical Clinics of Chicago....	159, 319	Cary, French S. Paper	447
		Medical Pickwick.....	79	Cavanaugh, John A. Paper.....	166
B		Model T. Ford. Page.....	80	Central States Conference on Social Hygiene (E).....	306
Bacteriology of Intestinal Influenza. A. J. Hinkelmann, Galesburg.....	353	Modern Aspects of Circulation in Health and Disease. Wiggers.....	159	Child, Keeping Normal.....	119
Bahr, Max A. Paper.....	265	Modern Medicine. Osler.....	79	Civil Service Examinations (E).....	307
Beck, Joseph C. Paper.....	231	Murphy, John P., Clinics of.....	471	Clark, J. Sheldon. Paper.....	127
Biesenthal, Max. Paper.....	344	Murphy, John B. Clinics.....	319, 159	Constitutional Inferior Individual and the Public. C. C. Atherton, Watertown	374
Blind Spot. Harry S. Gradle, Chicago	170	Physician's Visiting List	472	Correspondence:	
Blood Films, Interpretation of. A. L. Mann, Elgin.....	372	Practitioner's Visiting List	472	Folonie, R. J. Medico Legal.....	332
Blood Pressure from Clinical Standpoint. George Richter, St. Louis, Mo.	367	Regulation of Practice of Medicine.....	472	Optometry Legislative Vote in Illinois	333
Blood Pressure in General Practice. N. T. Stevens, Clifton.....	133	Tuberculosis Nurse, La Motte....	472	President Wilson.....	44
Blue, Robert. Paper.....	163	Nose and Throat, Diseases of. Coolidge	399	Corwin, A. M. Paper	423
Book Notices:		Obstetrics, Principles and Practice. DeLee	399	Crime Situation, Remedies. William Healey, Chicago.....	275
Alveolodental Pyorrhea. Bass.....	158	Operative Gynecology. Crossen....	160		
Applied Immunology. Thomas.....	160	Parke, Davis & Co., Papers from Research Laboratory. Houghton.....	240	D	
Automobile Blue Book, 1915.....	80	Pathology, a Text Book. Stengel.....	400	Deaths:	
Bacteriology, Principles of. Abbott ..	79	Physiology, Principles of Human. Starling	289	Bak, Henry; Chicago.....	157
Cancer, Its Study and Prevention. Taylor	240			Black, Greene Vardiman; Chicago.....	316
				Bosart, Jacob Hamilton; Sumner.....	299

Page	Page	Page
Bower, Reuben Willis; Sheridan...156	Peck, Comfort Edson; Highland Park...316	Hospital Practice.....209
Bradley, Charles Herbert; Minneapolis, Minn.....239	Peiro, Frank Lewis; Chicago.....399	Latest Activity of.....456
Brown, Robert Allison; Humrick...238	Pratt, Sidney G.; Kewanee.....238	Knocks and Boosts.....456
Bucher, Claude Earl; Williamsville...398	Prentiss, Charles William; Chicago...156	Legislation, Important, New.....41
Chamherlin, Cameron; Indianapolis, Ind.....399	Rankin, James Edward; Watertown...155	Malpractice, Actions for Civil.....43, 139, 209, 305, 379
Chenoweth, William J.; Decatur...316	Roberts, Charles B.; Towanda.....398	Optometry Bill, a Law.....138
Childs, A. S.; Wilmette.....155	Sheldon, Mathew H.; Mt. Erie...471	Patient's Standpoint.....378
Cole, Samuel; Chicago.....156	Sheppard, William W.; Chicago...316	"Peace on Earth, Good Will Toward Men".....453
Coleman, John W.; Decatur.....156	Smith, Henry D.; Vandalia.....316	Profitable Poetry.....208
Combs, George W.; Ridgeway.....398	Sperry, Herbert S.; Hull.....156	Secretary's Notice.....304
Core, Albert S.; Chicago.....156	Stennett, William H.; Oak Park...238	Society Work for the Year.....304
Cunningham, William Jamison McClement; Chicago.....316	Stewart, Clayton M.; Jacksonville...156	St. Mary's Hospital.....457
Day, William C.; Whitehall.....471	Summers, Edward; Shirley.....238	Edmondson, Edward E. Paper.....328
D'Arcy, Hugh Thomas; Chicago...156	Thompson, John Schnee; Palestine...398	Efficiency of Charitable Hospitals (E).....453
Ellison, Edward Orlando; Chicago...315	Tinkler, Pearl; Taylorsville.....398	Ehrlich, The Passing of (E).....208
Elms, Byron C.; Chicago.....399	Tovey, Peter Edwin; Galesburg.....156	Ellis, C. C. Paper.....294
Evans, Harry A.; Springfield.....315	Tompkins, J. Elizabeth; Chicago...155	Emerson, Charles P. Paper.....342
Farrar, Lockhart Brooks; Paxton...471	Walters, James Perry; Fairfield...156	Empyema, Thrombosis and Emholism, Death Following Laparotomy. F. C. Schurmeier, Elgin.....201
Firebaugh, Isaac L.; Robinson...471	Wedge, Dudley O.; Chicago.....155	Environment, Value of. H. P. Sights, Hopkinsville, Ky.....277
Firebaugh, Isaac L.; Robinson...399	Welsh, M. M.; Odell.....398	Epididymi, Infections and Treatment. Irvin S. Koll, Chicago.....11
Gee, Isaac G.; Mt. Vernon.....316	Willits, Azro Patterson; Keithsburg...238	Eugenics Again (E).....454
Gleeson, Benjamin; Danville.....238	Wright, Ida Mae; Evanston.....315	Exhaustion, Mechanism of. F. P. Norbury, Springfield.....1
Griffith, Franklin J. Clay; Annapolis.....156	Delinquent Boys and Girls.....283	Eye.....166, 170
Guthrie, John Blair; Evanston...156	Dewey, Richard. Paper.....435	
Hale, Henry E.; McLeansboro...238	Dementia Praecox.....262	F
Hall, Benj. F.; Rock Island.....471	Dementia Praecox, Paranoid and Hysteria. Max A. Bahr, Indianapolis, Ind.....265	Feeble-mindedness.....281
Hall, Benjamin F.; Rock Island...399	Diphtheria.....405	Ferguson, R. Ralph. Paper.....401
Hall, Elmer Elwood; Chicago.....155	Diphtheria Treatment in General Practice. R. Ralph Ferguson, Chicago.....401	First Aid Standardization (E).....380
Hamer, Thaddeus F.; Los Angeles...155	Doctor Caldwell Honored (E).....138	Folnie, Robt. J. Paper.....456
Hampton, John Werton; Norway, Mich.....156	Doctor Rodman and the College (E)...211	Folnie, Robert J. Paper.....43, 139, 209, 305, 379
Haass, Emil; Frankfort.....471	Doctor's Opportunity to Conserve Health of the People. John A. Rohison.....93	Foot and Mouth Disease (E)...210, 306
Harris, Geo. Frank; Jacksonville...471	Drake, C. St. Clair. Paper.....122	Franing, Edward C. Paper.....440
Hennessy, Margaret E.; Utica, N. Y...238	Doering, E. J. Letter.....456	Friedberg, Stanton A. Paper.....175
Hihbert, George A.; Chicago.....155	Drake, C. St. Clair. Paper.....424	
Holmes, Nathan; Delavan.....316		G
Holt, John Franklin; Assumption...155		Gahagan, H. J. Paper.....248
Huffaker, Thomas S.; Chicago...315	E	Goiter and Indications for Treatment. A. A. O'Neil, Chicago.....417
Johnson, Wm. M.; Johnsonville...471	Ear.....161, 171, 183	Goiter, Diagnosis and Medical Treatment of Exophthalmic. S. R. Pietrowicz, Chicago.....410
Johnson, William M.; Johnsonville...238	Eastland Disaster (E).....187	Goiter, see also Thyroid.
Kelly, Franklin Ellis; Green Valley...156	Editorials:	Good, R. H. Paper.....444
Kelly, Isaac H.; Stone Fort.....155	Actions for Civil Malpractice.....456	Gradle, Harry S. Paper.....51, 170
Kunz, Emil; Chicago.....156	Alienists' and Neurologists' Meeting.....43, 140, 304	Gradwohl, R. H. B. Paper.....432
Leslie, Joseph; Decatur.....471	American College of Surgeons, Anti-Typhoid Vaccination.....137	
Madison, Payton Chester; Chicago...398	Central States Conference on Social Hygiene.....306	H
Marshall, William P.; Oklahoma City...316	Civil Service Examination.....307	Haines, Thomas H. Paper.....283
McBride, James Fred; Sterling...315	Civil Service Examination.....307	Hall, George W. Paper.....361
McCaslin, Carl N.; Earl Park.....398	Disgraceful Treatment of Chicago Doctor by Police.....381	Hamill, Ralph C. Paper.....13
McCutchan, James Fulton; Alexis...156	Doctor Caldwell Honored.....138	Hansen, Paul. Paper.....101
McDill, John B.; Danville.....471	Doctor Rodman and the College...211	Harrison Narcotic Law, Effects Observed in Jacksonville State Hospital. T. G. McLin, Jacksonville...197
McDougall, William; Joliet.....157	Eastland Disaster.....137	Head, Some Infections of and Causes. J. Sheldon Clark, Freeport.....127
McGuire, John G.; Anamosa, Iowa...399	Efficiency of Charitable Hospitals...453	Health Conservation.....93
Melcher, Samuel Henry; Chicago...238	Ehrlich, The Passing of.....203	Health Needs in Illinois. C. St. Clair Drake, Springfield.....122
Meyer, Frantz Josef; Evansville...155	Eugenics Again.....454	
Mory, Daniel B.; Springfield, Ohio...316	First Aid Standardization.....380	
Mowry, Henry P.; Bronson.....471	Foot and Mouth Disease.....210, 306	
Norderling, Karl A.; Paxton.....156	Hospital Control and Efficiency....378	
Parkhurst, Fred Julius; Danvers...399		

	Page		Page		Page
Healey, William. Paper.....	275	Bradbury, Warren E.; Clinton.....	471	Mental Hygiene in Childhood. E. B. McCready, Pittsburgh, Pa.....	255
Heart Disease, see Myocardial.....		Bryan, Clarence H.; Chicago.....	79	Milk, Better at Better Price. Chas. J. Whalen, Chicago.....	422
Hernia, Operative Treatment of Pelvic. Henry T. Byford, Chicago.....	109	Chloupek, Elton A.; Chicago.....	315	Milk, Certified.....	90
Hickson, W. J. Paper.....	262	Christenson, Peter Joseph; Chicago.....	155	Milk Commission, Making of. J. W. VanDerslice, Oak Park.....	86
Hinkelmann, A. J. Paper.....	353	Clayton, John Wesley; Johnson City	79	Miller, John H. Paper.....	26
Hospital Control and Efficiency (E).....	378	Conley, Charles Taylor; Park Ridge	79	Miller, Joseph L. Paper.....	407
Hospitals, Inadequate Planning of. Richard Dewey, Wauwatosa, Wis.....	435	Corey, Frederick Johnson; Havana.....	471	Mitchell, H. C. Discussion.....	25
Hospital Practice (E).....	209	Cox, James Francis; Chicago.....	398	Mundt, G. Henry. Paper.....	171
Hubeny, M. J. Paper.....	358	David, Vernon C.; Chicago.....	398	Myocardial Disease, Painful Manifestations of. L. C. Taylor, Springfield.....	30
Huber, J. E. Paper.....	207	Dicker, Willard Woodard; Oak Park.....	315		
I		Drake, Arthur Knowlton; Monmouth.....	471		
Infections, Focal.....	178	Fair, John F.; Freeport.....	238	N	
Infections of the Head.....	127	Foster, Thomas Reese; Watseka.....	238	Nephritis, Urinary Analysis and Treatment of.....	186
Influenza, Bacteriology of Intestinal.....	353	Goggin, John William; Chicago.....	155	Neu, C. F. Paper.....	271
Insane, Care of the. H. J. Gahagan, Elgin.....	248	Hall, Fairfax; New Rochelle, N. Y.	79	Neurasthenia.....	250
Insane, Pre-Institutional Care of. C. C. Ellis, Dunning.....	294	Hoffman, Ira Elmer; Chicago.....	155	New and Non-Official Remedies.....	157, 239, 317
Interstitial Gingivitis and Pyorrhea Alveolaris. E. S. Talbot, Chicago.....	438	Howe, Lyston D.; Streator.....	155	Newcomb, Philip B. Paper.....	252
K		Kirkwood, Robert Carnahan; Chicago.....	238	News Items.....	469
Keeping the Child Normal. William O. Krohn, Chicago.....	119	Lackner, Ernest; Chicago.....	79	News Notes.....	77, 154, 236, 315, 397
King, C. B. Discussion.....	29	Lawrence, Leslie; Bloomington.....	471	Norbury, Frank P. Paper.....	1
Knocks and Boosts (E).....	456	Maciejewski, Felix J.; La Salle.....	155		
Koll, Irvin S. Paper.....	11	McClanahan, Frank Chalmers; Viola.....	398	O	
Kramer, O. M. Paper.....	279	Meloan, Joseph Francis; Media.....	79	Ohls, Henry G. Paper.....	37
Krohn, William O. Paper.....	119	Moss, Charles Taylor; Champaign.....	79	O'Neill, A. A. Paper.....	417
L		Muller, Fred Herman; Chicago.....	238	Omentum, Carcinoma of.....	34
Lamont, J. G. Paper.....	348	O'Neill, John P.; Highland Park.....	315	Ophthalmia, Sympathetic. Robert Blue, Chicago.....	163
Lanza, A. J. Paper.....	350	Rice, John Henry; Quincy.....	315	Optometry Bill a Law (E).....	138
Legislation, Important, New (E).....	41	Reuss, Harry Pierce; Granite City.....	398	Otitis Media, Clinical Problems in Complications. George E. Shambaugh, Chicago.....	161
Levinson, A. Paper.....	405	Richter, Harry Mortimer; Chicago.....	155	Otosclerosis, Diagnosis of. G. W. Boot, Chicago.....	133
Lillie, C. W. Letter.....	457	Riebe, Theodore Charles; Chicago.....	315		
Lillie, Charles W. Inaugural Address.....	44	Robertson, Leslie L.; Livingston.....	238	P	
Locomotor Ataxia, Why Delay in Recognizing? C. F. Neu, Indianapolis, Ind.....	271	Roome, Clarence Tyler; Evanston.....	315	Peace on Earth, Good Will Toward Men (E).....	453
M		Rosenthal, Sam'l D.; Chicago.....	470	Patient's Standpoint (E).....	378
Malpractice, Actions for Civil (E). Robert J. Folonie, Chicago.....	43, 139, 209, 305, 379	Rosenthal, Samuel D.; Chicago.....	155	Percy, Dr. Discussion.....	30
Malpractice, Civil Liability of Physician for. John H. Miller, Pana.....	26	Scott, Russell Adams; Evanston.....	398	Peritonitis, Septic, Treatment. J. E. Allaben, Rockford.....	17
Mann, A. L. Paper.....	372	Sisson, Charles E.; Elgin.....	398	Personals.....	468
Marriage of Diseased and Defectives, Reciprocal State Laws. A. M. Corwin, Chicago.....	428	Smith, Clarence Vernon, Tipton, Ind.....	398	Personals.....	77, 154, 236, 314
Marriages:		Theodore, Constantine; Chicago.....	470	Pettit, J. W. Paper.....	22
Anderson, James Leroy; Winfield.....	471	Vonnahme, Conrad B.; E. St. Louis.....	471	Pfrophephrenia and Dementia Praecox, Relation to Crime. W. J. Hickson, Chicago.....	262
Baldwin, Frank Eugene; Peoria.....	238	Welch, Alan Richard; Smithfield.....	471	Pietrowicz, S. R. Paper.....	410
Betts, Arthur T.; Chicago.....	155	Williams, Alice Dodge; Chicago.....	315	Pneumonia, Specific Treatment in Croupous. Joseph L. Miller, Chicago.....	407
Birsner, Louis; Belleville.....	315	Williams, Everett Benson; Chicago.....	155	President's Address. Albert L. Brittain, Athens.....	81
Boswell, Clarence H.; Rockford.....	471			Profitable Poetry (E).....	205
		Mautz, G. J. Discussion.....	29	Psychiatry, Observations in. B. F. Williams, Lincoln, Neb.....	246
		McCready, E. Bosworth. Paper.....	255	Psychoneurosis, Causative Factors in. Meyer Solomon, Chicago.....	301
		McKay, W. H. Paper.....	281	Psychoses in Twins. Philip B. Newcomb, Osawatomic, Kans.....	252
		McLin, T. G. Paper.....	197		
		McMichael, O. W. Paper.....	337		
		Medical College Training. Charles P. Emerson, Indianapolis, Ind.....	342		
		Medical Inspection of Employes on Certified Farms. Grace H. Campbell, Chicago.....	90		
		Mental Disease. Carl W. Sawyer, Marion, Ohio.....	244		
		Mental Examination of Delinquent Boys and Girls. Thomas H. Haines, Columbus, Ohio.....	283		

Public Health:	Page	Society Proceedings:	Page	McHenry County:	Page
Better Babies Contest.....	215	Adams County, July and August, 1915	312	February 9.....	152
Civil Service Notes	458	American Association for Study and Prevention of Infant Mortality, November 10 to 12, 1915.....	213	July 23.....	395
Contagious Disease Situation	452	Adams County, Nov. 8	460	September 9.....	396
Epidemiologist Wanted.....	214	Cass and Morgan Counties, August 12, 1915.....	226	Morgan County, August 12.....	226
Health Exhibit.....	213	Clark County:		Ogle County:	
Measles Reports.....	46	June 10, 1915.....	73	April 21.....	75
Osteopaths to Prescribe Medicine...	141	August 2, 1915.....	312	July 21.....	313
Reciprocity Privileges	458	Cook County:		Ogle County, Oct. 20	467
Sanitary Engineering Board.....	141	Alienists and Neurologists, July 12 to 16.....	48	Rock Island County:	
Scarlet Fever in Joliet.....	46	Chicago Laryn. and Oto.: February 16, 1915.....	228	June 8.....	76
State Board of Health Notes.....	215, 310	March 16, 1915.....	390	August 10.....	236
Summer Resorts.....	48	Chicago Laryn. Society, March 16, Cont'd. April 20....	463	October 12.....	396
Tuberculosis Conference.....	213	Chicago Medical Society:		St. Clair County, June 3 and September 10.....	313
Typhoid Fever and Carriers.....	308	June 2, 9, 16.....	78	St. Clair County, Nov. 11.....	467
Typhoid in Menard County.....	310	October 6, 13, 20, 27.....	390	Stevenson County, July 15.....	153
Public Health Activities in Illinois. C. St. Clair Drake, Springfield....	424	Chicago Medical Society, Nov. 3, 10, 17, Dec. 1.....	460	Stevenson County	467
Public Health Work, Co-operation by Neighboring Small Cities. Gustave F. Ruediger, La Salle.....	96	Chicago Ophthalmological Society:		Tri-State, October 6 to 8.....	211
Pyelonephritis. French S. Gary, Chicago	447	March 15.....	147	Vermilion County:	
Pylorus, Congenital Hypertrophic Stenosis of. Floyd B. Riley, Chicago....	194	May 17.....	228	June 14.....	76
Pyorrhea Alveolaris	438	Crawford County, July 8.....	234	September 16.....	314
Retrospect. Charles F. Smith, Kankakee	450	DeKalb County, May 7.....	73	Winnebago County:	
Rhinitis, Sugar Treatment of Ozenal. Charles B. Younger, Chicago.....	449	DeKalb County, Oct. 29	467	May 11.....	77
R		Fulton County, July 6.....	151	June 8.....	164
Reeder, Charles L. Paper.....	250	Illinois State Medical Society:		October 12.....	396
Reflections. E. W. Weis, Ottawa....	107	Annual Meeting, May 18 to 20... 52		Winnebago County, Nov. 9	468
Respiratory Tract, Foreign Bodies in. Stanton A. Friedberg, Chicago.....	175	Eye, Ear, Nose and Throat Section, May 17 to 19.....	217	Woodford County, May 4.....	154
Richter, George. Paper.....	367	Secretary's Conference.....	142	Woodford County, Oct. 19	468
Riley, Floyd B. Paper.....	194	Section on Public Health and Hygiene	143	Society Work for the Year (E).....	304
Robison, John A. Paper.....	194	Iroquois-Ford Counties:		Solomon, Meyer. Paper.....	301
Roentgenology of the Skull. M. J. Hubeny, Chicago.....	358	June 1.....	73	Stevens, N. T. Paper.....	133
Ruediger, Gustave F. Paper.....	96	September 7.....	313	St. Mary's Hospital (E)	457
S		Jackson County:		Submerging in Asphalt at Temperature of 360° F. with Recovery. O. F. Scott, Argo.....	377
Sala, E. M. Paper.....	114	July 1.....	153	Syphilis, Diagnosis and Treatment. Lewis D. Smith, Chicago.....	290
Sawyer, Carl W. Paper.....	244	September 22.....	394	Syphilis, Inherited in Feeble-mindedness. W. H. McKay, Columbus, O.281	
Schick Diphtheria Reaction, Value and Limitations of. A. Levinson, Chicago	405	Kankakee County, June 10.....	73	Syphilis of Nervous System, Treatment and Prognosis. Ralph C. Hamill, Chicago.....	13
Schurmeier, F. C. Paper.....	201	Macoupin County:		Syphilis of Nervous System, Intraspinal Therapy. R. H. B. Gradwohl, St. Louis, Mo.	432
Scott, O. F. Paper.....	377	June, 1915.....	74	Syphilis of the Internal Ear. G. Henry Mundt, Chicago.....	171
Secretary's Notice (E).....	304	July 2.....	152	Syphilis, Prevalence in a Penal Institution. O. M. Kramer, Columbus, Ohio.....	279
Serum Treatment for Physiologically Defective Thyroids. Rachel Watkins, Chicago	419	August 6.....	235	T	
Shambaugh, George E. Paper.....	161	September 3.....	313	Talbot, Eugene S. Paper	438
Sights, H. P. Paper.....	277	October 1.....	395	Tarnowsky, George de. Discussion... 21	
Sinus Disease, Non-Suppurative, in Relation to the Eye. John A. Cavanaugh, Chicago	166	McDonough County, October 7.....	395	Taylor, L. C. Paper.....	80
Sinusitis, Acute Frontal. R. H. Good, Chicago	444	McLean County, June 3.....	75	Teague, Mrs. Sibyl M. Paper.....	346
Smith, Charles F. Paper	450			Thomas, Henry B. Paper.....	321
Smith, Lewis D. Paper.....	290				

	Page		Page		Page
Thyroid Gland Re Neurasthenia and Mental Defects. Charles L. Reeder, Tulsa, Okla.....	250	Tuberculosis, Treatment of Laryngeal. Edward E. Edmondson, Mt. Vernon.....	328	Watkins, Rachel. Paper	419
Thyroids, Serum Treatment for Defectives	419	Tuberculosis, Urochromogen Reaction in Pulmonary. Max Biesenthal, Chicago	344	Weis, E. W. Paper.....	107
Tonsil, Focal Infections in Relation to. Frank Brawley, Chicago.....	178	Tuberculous Disease of the Spine, Treatment of. Henry D. Thomas, Chicago	821	Welcome. Charles J. Whalen, Chicago	242
Trachea	175			Wettstein, J. C. R. Paper.....	332
Tuberculosis, Best Prevention from Patient's Standpoint. Mrs. Sibyl M. Teague, Bloomington, Ind.....	346			Whalen, Charles J.: Address	242
Tuberculosis, Early Diagnosis of. A. J. Lanza.....	350			Paper	34
Tuberculosis in Children. O. W. McMichael, Chicago.....	337	U		Whalen, Charles J. Paper	422
Tuberculosis Notes.. 50, 140, 211, 305, 382		Urinary Analysis in Treatment of Nephritis. B. G. R. Williams, Paris..	186	Williams, B. F. Paper.....	246
Tuberculosis Prevention from Physician's Standpoint. J. G. Lamont, Dunseith, N. D.....	348	Urochromogen, Reaction in Pulmonary Tuberculosis	344	Williams, B. G. R. Paper.....	186
Tuberculosis, Symposium on. J. C. R. Wettstein, Effingham.....	332				
Tuberculosis, Traumatism as Factor in Pulmonary. J. W. Pettit, Ottawa..	22	V		X	
		VanDerslice, J. W. Paper.....	86	X-Ray Work, Comparative. E. M. Sala, Rock Island.....	114
		W		Y	
		Wastes Collection and Disposal, Present Practice. Paul Hansen, Urbana.....	101	Younger, Charles B. Paper.....	449





CHARLES W. LILLIE, M. D
PRESIDENT ILLINOIS STATE MEDICAL SOCIETY, 1915-1916

14623

ILLINOIS MEDICAL JOURNAL

SEP 25 1915
THE OFFICIAL ORGAN OF

THE ILLINOIS STATE MEDICAL SOCIETY

VOL. XXVIII

CHICAGO, ILL., JULY, 1915

No. 1

THE MECHANISM OF EXHAUSTION.*

FRANK P. NORBURY, A. M., M. D.,
SPRINGFIELD, ILL.

Medical Director and President of the Norbury Sanatorium,
Jacksonville, Ill.

"We are in truth in the midst of a quiet but irrepressible and progressive revolution in thought which cannot fail profoundly to alter man's point of view, not only of life in general, but of the nature and judgment of human conduct."

This quotation is from the posthumous essays of Dr. Christian A. Herter,¹ one of America's foremost scientists and physicians, whose untimely death is keenly felt in the progress of scientific thought in the biological problems, now prominent in medicine and surgery. Herter viewed the human body and its functions, in the light of present day inquiry which has given rise to the mechanistic hypothesis of life, which views the human being as a biological entity, presenting problems to be met from the standpoint of experimental science rather than from descriptive science. This view, we believe is tenable and implies, necessarily, that the human body is an automatic, self-regulating machine of "unfathomable complexity and extreme plasticity" acted upon from within and from without by very varied and innumerable stimuli.

Further, that man, like other living animals and plant life in general, possesses a wonderful adaption of each part of the living being to the whole, by which organism becomes possible and adaption of the whole to the environment in which life exists. The phenomenon of adaption then is fundamental to the biological conception of life. In fact, adaption to the environment is the fundamental law of nature and selection is the means of obtaining this adaption. Chatter-

ton Hill² says: "The aim of nature in so far as we are justified in ascribing an aim to her—is not a moral but a mechanical one."

Adaption, perhaps, is not fully understood in all of its details but that it has for its purpose the preservation of species, we can understand; and that from the ameba to man the persistence of adaption to environment is essential. With man, this environment may be increasingly heterogeneous. The struggle for survival then becomes a question of adjustment to the environment, to meet the demands, individual and social, best fitted for man to thrive in that particular environment.

Jastrow says that "Adjustment is the law of organic life whether lowly or complex." To bring about adjustment, the organism must find contentment and relief from the irritations of uncongenial environment.

In conflict with environment, biological variations occur, in order to bring about adjustment. This biological variation may, on this account, become a characteristic of the species. In order, however, for a variation to become a characteristic of a species, there must be some condition which acts in an identical manner on every individual of that species. It is, therefore, obvious that such a condition can only be found in the environment in which the whole species lives and to which the whole species is exposed.

The most important of these environmental conditions are climate and food. We are, as physicians, concerned with both climate and food as factors which profoundly affect the habitat of human beings and to which is exposed the human race as a whole.

The variations or modifications, incidental to climate or food to the species (the human race) as a whole, or to man as an individual, are not transmissible as hereditary factors. Therefore, the influence of modifying conditions can only

*Read at the sixty-fifth annual meeting of the Illinois State Medical Society, at Springfield, May 19, 1915.

1. Biological Aspects of Human Problems, Macmillan, 1911.

2. Heredity and Selection in Sociology, A. & C. Black, 1907.

make itself felt as long as these conditions prevail. DeVries, Standfuss and Merrifield, Nageli and others have proven by experiments in plant life, that modifications may be effected by direct action of environmental conditions, in each individual life, due to temperature variations; that these variations show a tendency toward return (reversion) to an ancestral type, but there is no inherited somatic modification. Hill believes, it is doubtful whether changes determined by climate or nutritional influences, are hereditary, but says that climatic environmental influences may alter the germ of species so far as such alteration is compatible with the continued existence of the species. Selection demonstrates this fact, that if that species is physiologically incapable of adapting itself to the environmental modifications, then that species must succumb. Selection is incapable of adapting any species, beyond certain limits of climatic change. Selection is responsible for all the transformations and modifications effected in the organic world. The first condition of progress in the organic world, alike in all species and of the race and individuals within a species, is in conflict—the struggle for existence—the survival of the fittest and the elimination of the weak in the conflict.

"It is through conflict alone that the fittest can be selected, because it is through conflict alone that they are afforded the chance of manifesting those qualities, physiological and psychological, which make them the fittest."

Conflict is another great law of nature and is shown between plants in the vegetable world, between animals in the animal world, and between the human species in this much vaunted world of man's power, where in the end, in all conflicts, it is the ruthless extermination of the weaker.

Conflict, arising in the fundamentals of existence climate and food, is shown under the influence of conditions which affect the special or races as a whole and where the struggle for survival of the fittest is paramount. Weismann and others have shown that this conflict is no less keen in the human species as elsewhere in the domain of life. There are other conditions, it is true, which come in to become modifying factors, the ill-defined forces which are eternal—not the brute forces—but forces which attain importance and value in the field of social evolution, such as greater capacity, intellectual influences,—greater

physical endurance, greater efficiency and a host of conditions of social value out of which has grown social evolution. Fitness, to meet all conditions, implies biological fitness, physical capacity to work and endurance, capacity to reproduce the species, capacity of adaption to meet the conditions of social life and the power of resisting vices and diseases. Conservation of these qualities for the good of the species means eternal conflict. "Life left to itself does not enter the path of progress, but that of regression." Whenever regression is noted, there must be abnormal fatigue, exhaustion, decay and death. The struggle, the conflict, is therefore inevitable; without it, selection can not act, and without selection and the suppression of conflict, human society would suppress itself.

We physicians who deal with the biological problems incidental to our professional work, recognize that the expansion of the human race is in environment—the social environment in which life is immeasurably longer and more productive.

We also know that when any individual, society, community, race, etc., has its expansion hemmed in by barriers artificial or otherwise, there must some day come a conflict with these barriers,—a social revolution will occur and if the expansion power is insufficient to overcome the barriers, then that individual or race, will be thrust back in conflict and eventually eliminated.

"The power of expansion of a race is defined by its capacity for social evolution."

The need of expansion is inherent in all races; it is inherent in all life and it can be satisfied only by the fundamental law of life, selection with adaption.

Benjamin Kidd, says, that the forces which are working for our development are primarily concerned not with the interests of the individual, but with those of the race. He also says:

"If he consulted his reason only, man would put a stop to these conditions of conflict, which, if they ensure the survival of the stronger, who are a minority, do none the less ensure with equal certainty the elimination, or quasi-elimination, of the weaker or less fit, who are, after all, a majority among the population at any given moment."

Human nature demands expansion; it is never satisfied and its insatiability would lead it to

overthrow tomorrow the system it erected today. It must expand in order to satisfy its wants, so must conflicts surge afresh. The law of organic evolution must prevail for the interests of future generations. If we will but study the application of these facts of selection, adaption, etc., to our biological problem of exhaustion, we find them all sustained in our observations. First, let me call your attention to selection as part of the phenomena observed in the climatic environment where climate affects the whole species and consequently the reactions are upon the whole, modified by individual inadequacies which make this individual more susceptible to the rigors or vicissitudes of climate.

Ellsworth Huntington, Ph. D.,³ of Yale University, has given us original and valuable studies of the effects of climate and weather upon individuals in their capacity for work—the measurements of differences in efficiency of laborers and other workers of various races. These differences then are applied to factories, schools and other institutions, with a view not to change the climate, but to understand the meteorological conditions which have specific effect upon individuals.

He has made studies showing what effects seasons have upon work and how, from month to month, efficiency changes, also in the school work of students at West Point and Annapolis. Huntington says: "It is much harder to weigh the work of a man's brain than that of his hands." To make comparisons of both, however, he studied factory work, selecting operations in which wages vary not only according to speed but also according to accuracy."

Work from over four hundred men and girls for the entire year was tabulated and presented in graphic form as shown in Chart I. This seasonal curve shows at the extreme left relatively little was accomplished early in 1910. About the middle of January the wages began to rise and continued so until near the end of April and from mid-April until late in June the work showed greatest activity; a decline then follows through the summer with an increase in September until November when the highest point was reached.

In 1911, the lowest point was in January and the highest point in June. In 1912 they were

again low in January and remained so until April, when they began to rise and reached the highest point in June.

The curve for 1913 is similar. Combining the four years in a single curve, we note the lowest wages are in January, the highest in June, with a drop gradually up to December with abrupt drop in January. This curve means that the common environmental factor of climate is at

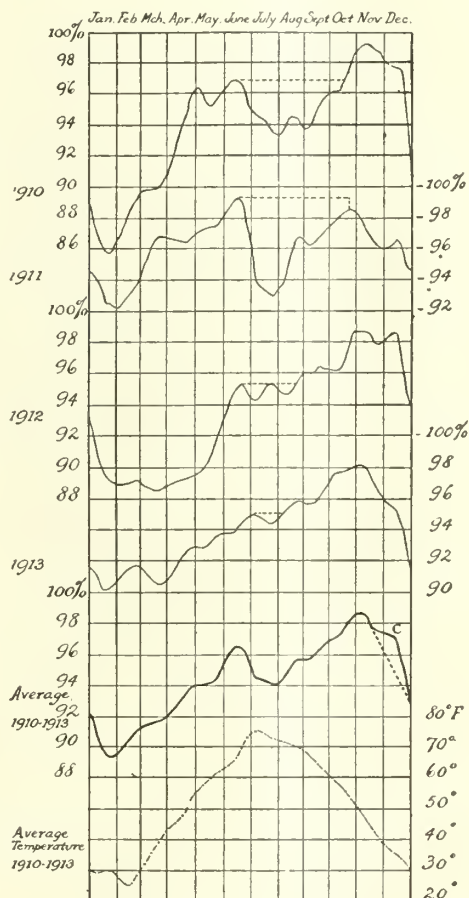


Chart I. The Efficiency of Factory Operatives. (Huntington.)

work from year to year and the cause of the variations is in the energy of the operatives, which varies from season to season, from month to month.

Apply the same observation to mental work and a similar curve is developed as seen in Charts II and III, showing seasonal variations due to environmental conditions, acting in common upon the students.

Those variations apply to all people in all

3. Harper's Magazine, January, 1915.

countries in the North Temperate Zone. The study of these variations shows that the activities of all sorts of living beings seem to vary in response to temperature and that the variations all seem to follow the same law. Each type of activ-

ity has a distinct optimum at which it is greatest. Mental work reaches its highest at a temperature of 38 degrees, while physical work reaches a maximum of 59 degrees for men and 60 degrees for girls.

The curves of the variation of efficiency according to mean temperature are especially interesting because they are closely similar to curves which have been calculated for plants and animals.

Huntington further says: We have an idea that people need vacations in summer but apparently the need is much greater in January and February. It seems that for operatives in factories, it is eminently wise that work should be light during the winter months. It is also suggested in the study of the curves that the time to speed up is when nature lends her aid. To speed up in February is analogous to whipping a tired horse and expecting him to win in a race. It is true that speeding up in all activities through the winter exhausts people to an undue degree.

It is true that the nervousness of the American people as well as all forms of mental and nervous exhaustion are produced by the high pressure activities through the winter when the need of relaxation is greater. To prove that this statement is true, let me show you analogous curves showing that incipient mental disorders, the general paralysis curve and the suicide curve correspond to the seasonal curves showing greatest efficiency.

These curves are for the North Temperate Zone and are compiled from data gathered for a good many years, observations in the metropolitan centers where such records are a feature of municipal and hospital records. These curves show conclusively the effects of climate as an environmental factor acting upon the people as a whole, serving to show the action of the natural laws of selection and adaptation.

The unfit are gradually, through the influence of climate as a contributory factor, weakened and succumb to the effects of exhaustion.

These influences are at work year after year, day after day, but in seasonal varia-



Chart II. The Strength of School Children Compared with Work of Factory Operatives. (Huntington.)

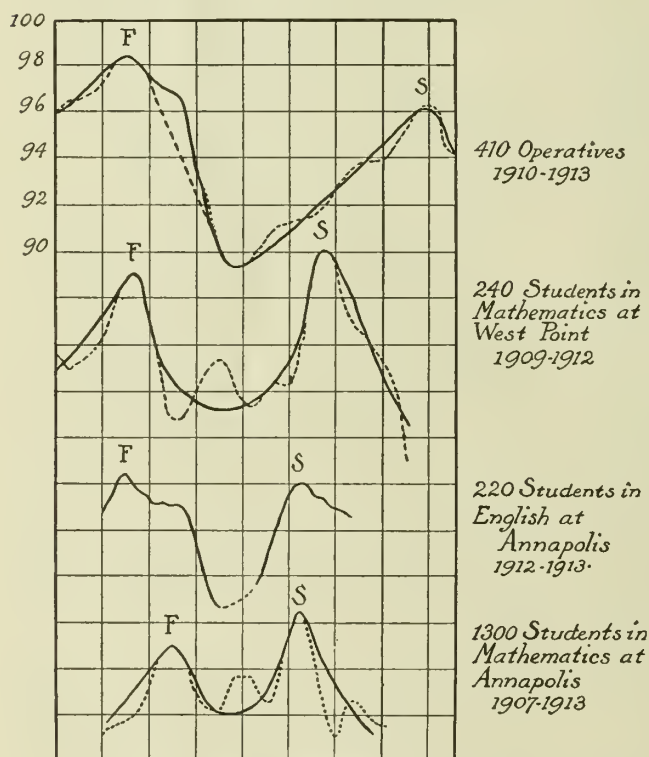


Chart III. Seasonal Changes in Mental and Physical Activity. "F" and "S" indicate Fall and Spring Maxima. (Huntington.)

tions this force, what ever it is, leaves its mark to the degree of producing nervous exhaustion, incipient mental disorders, etc. How this force acts we do not know but that it is selective, therefore beneficent in race preservation, we do know. Future observations doubtless will help us unravel these mysteries of maladjustment and misadaption. I have observed these seasonal curves in my own practice for over twenty-five years and I will add to the curve some day, my observations on the group of exhaustion psychoses which is one of the most important groups clinically because it offers hopes for recovery under prompt and early recognition and treatment. This group has a definite mechanism following madadjustments of the physico-chemical activities, such as now are receiving so much attention in the realms of modern biological research.

Now that we have considered climate in its environmental selective action and the question of adaption as a factor in the conflicts for survival, let us consider the scientific interpretation of physiology, chemistry, pathology and psychology regarding their cardinal importance in this field of selection and adaption as applied to clinical medicine and as essential factors in the mechanism of exhaustion.

The busy practitioner is well aware, as Langdon Brown well says, that the physiology of his student days has largely been supplanted or supplemented, but has not time to acquaint himself with the changes, nor to deduce therefrom the points on which his clinical conceptions should be modified.

Again, the recent research work in the field of chemical pathology and of biological chemistry, as applied in practice, has given us a broader and more comprehensive understanding of the physiological and pathological processes with which we are concerned in practical bedside work. Then add to this the constructive research in applied psychology, which has attacked the problems new and old in the mental processes of man and we have presented the value of team work in the interpretation of the phenomena of disease.

Clinical medicine demands that the individual be studied from all of the view points just mentioned that we may know the traits of mind as well as the traits of body.

True, we may have to go further in some of our problems in practical life, where they extend into the realms of ethics and sociology, where the life history of the individual may, from a biological view point, need more intensive study with reference to the most determining events of his life. The latter implies the essential vent, bearing upon life as a whole and includes the ideals of the society in which he lives, the goal of his ambitions and the measure of his anticipated happiness with all of its complexities.

Knowledge, as elicited from a study of all of these factors, potential, active and contributory, has an important and essential bearing upon the phenomena of exhaustion, both in etiology and its mechanism.

It also is a determinant in the plan of therapeutic attack which the physician may outline.

Exhaustion is defined by Steadman as "extreme fatigue, inability to respond to stimuli." Fatigue is defined by Stoddard⁴ "as a diminution of muscular and intellectual power, arising from prolonged activity of any kind and accompanied by a sense of weariness."

Abnormal fatigue is exhaustion. Dercum,⁵ in his clinical studies of the phenomena of abnormal fatigue, coined the term "fatigue neuroses," which, as entities of disease, are now recognized and have a definite clinical value. Fatigue and exhaustion with their variation, to be clinically understood, must be studied in their mechanisms along the lines of physiological, chemical and psychological inquiry.

One of the most interesting fields of modern physiological research is the study of the mechanisms of the nervous system. This is true of the notable work of Sherrington, Cannon, Crile and others, varying as it does through the realms of biological research from the simpler to the deeper, subtler and conative reactions.

Sherrington⁶ studied the reactions from those main points of view, viz: First, that of the nerve cells, which, like all other cells, he shows, lead individual lives. They breathe; they assimilate; they dispense their own stores of energy; they repair their own substantial waste and, in short, each cell is a living unit with its nutrition more or less centered in itself. He says:

4. *Mind and Its Disorders*, Blakiston, 1912.

5. *Cohen's System of Therapeutics*, Blakiston.

6. *The Integrative Action of the Nervous System*, Yale University Press, 1911.

The cells of the nervous system have nutritional problems comparable to those of other living cells.

The differentiated forms of cells of the nervous system contribute to special problems incidental to these special forms, but withal the problems of nutrition of all cells wherever found are practically the same. Second: The cells of the nervous system have specific functions, viz.: They have in exceptional measure the power to spatially transmit (conduct) states of excitement (nerve impulses) generated within them. This is an important and imminent function of nerve cells and enters into every question of the specific reactions of the nervous system. Third: The integrative action of the nervous system. By this is meant the bringing together of parts as a whole, of the multicellular functions of animal life, especially those higher reactions which constitute behavior of the individual as a social unit in the natural economy. The nervous reactions are thus welded together—the components, thus welded form collections and give individuality. This is the solidarity of action, which gives individuality to all animal life in its nervous reactions. This action being the resultant of all agencies, viz.: mechanical combination of unit cells into a single mass; the integrative action of muscles where the tendon, as a single cord, has back of it a myriad of contractile cells, to concentrate upon a single place of application; chemical action, as in the reaction of hormones, as revealed to us in the study of physiological chemistry, and where with the blood as a medium, the varied internal secretions effect remote reactions.

The integrative action of the nervous system works, however, not by an intercellular medium as in connective tissue, nor in material transferred in mass, as in the blood, but on living lines of stationary cells along which it dispatches waves of physico-chemical disturbance and these act in releasing forces in distant organs where they finally impinge.

This internal intercommunication of multicellular organism is due to a complexity of organization, in which special cells assume the express office of connecting together other cells.

The activities of this phenomena are studied by reflex action.

We all understand reflex action; that its mechanism has for its function, irritation, conduction and end effect.

The reflex arc being the unit of mechanism of the nervous system, when considered in its integrative action. Every reflex is an integrative reaction. As we study reflex action we find that there are two grades, viz: the simple and the compound reflexes.

Coordination is a compounding of reflexes. In the simple reflex, we have an effector, responsive to stimulation through the receptor and responsive alone to this stimulation—all other parts

of the organism being indifferent to and for that reaction. In the compound reflex, coordination takes place by simultaneous combination of reflexes in sequential order, the coadjustment being orderly. We call this coordination. The absence of sequence in reactions and consequent disorderly adjustment, we call incoordination. It is, therefore, in the orderly and sequential reflex reaction compounded, that we find the secret of nervous coordination. Experimental physiology has demonstrated that in all reflex action, the receptor is attuned in its mechanism to certain definite and specific stimuli, thus rendering it more apt and responsive to these stimuli and less apt, or not at all, to other kinds of stimuli.

The main function of receptor is to lower the threshold of excitability of the arc for one kind of stimulus and heighten it for others. Here is where we again note adaption as a factor paramount in the welfare of the individual.

"Adaption has evolved these mechanisms for special kind of stimuli—the so-called adequate stimuli," which gives rise to selective excitability, a factor in coordination because it renders individual arcs prone to respond to certain specific stimuli in a certain and specific reaction. The Darwinian theory holds that every reflex must be purposive and the object of every reflex, therefore, is to enable the organism to better adapt itself to its environment.

Adaptive reactions are being studied both by the physiologist and the psychologist. The data thus accumulated has become of great practical value to the physician and represents some of the most intensive and constructive research work of today. The work of Crile of Cleveland, in the development of his Kinetic Theory and his studies of the emotions; the work of Cannon of Boston in his very original experimental research concerning the emotions of Kraepelin of Munich in his studies of mental disorders; of Freud in his studies of the psycho-neuroses; Loeb in his studies of the mechanistic conception of life and a host of other workers have given new interest, new values and great promises of practical results in the accumulated knowledge showing how intimate indeed is the relationship between body and mind. The study of the emotions has particular value as evidences of primary reactions, with the secondary reflex actions of vascular and visceral organs of the body excited by certain

specific stimuli of peculiar quality. Crile,⁷ says emotion may be regarded almost as a feeling, it being an elaborated sensation built by a group or train of ideas—associated ideas—with their accompanying feeling tones. The associated visceral reactions of the heart, blood vessels, respiratory muscles, digestive apparatus, glandular secretions, sexual apparatus are one and all a part of the phenomena of the emotions. These viscera, though otherwise remote, from the general play of mental processes, are affected vividly by the emotions and emphasize Sherrington's teachings concerning the integrative action of the nervous system. Again, let us remember that emotional tones are transferred from one idea to another: this we term irradiation of the intellectual feelings and explains how both our entire emotional and volitional life is ruled by such irradiations. The emotional tones of different ideas are exceedingly complex, not only as regards intensity but as regards quality.

In consequence of this, each idea receives not only from its fundamental sensations but by irradiation a great variety of emotional tones which differ in intensity and in quality. Ziehen⁸ says this explains the complex feelings and moods in countless shades that accompany almost constantly the more highly developed intellectual life. Psychology is called upon to classify these complex emotions and psycho-pathology to fathom their countless transitions and reactions as shown in abnormal conduct. Here we find instinctive impulses overlaid by secondary reaction, which may be evidences of morbid hypertrophy or of superior reasoning power.

The study of the primary emotion of fear with all of its irradiations from mild anxiety to abject terror affords the most impressive study of the diversified effects of strong emotions. It shows truly the integrative action of the nervous system, even to the degree of inhibition when during the continuance of the emotion of fear it tends to bring to an end, and at once, all other mental activity and concentrates its force upon the neuro-muscular activities, arrests the process of digestion and every other organ or tissue is stimulated or inhibited according to its use or hindrance in the physical struggle for existence. Fear produces exhaustion because the powerful

stimulus of the emotion "drains the cup of nervous energy, even though no visible action may result." Crile says, "When this mysterious phenomenon is applied to human being of today, certain mysterious phenomena are at once elucidated. He says: "It must be borne in mind that man has not been presented with any new organs to meet the requirements of present day civilization: indeed, not only does he possess organs of the same type as those possessed by the savages, but also of the same type as those possessed by the lower animals." Man reacts to fear, therefore, today just as he did in his long struggle for existence in primitive times. Man, when he fears a business catastrophe, or has anxiety because of sickness in his family—as an example, the mother with her sick child—or is the victim of an accident, or has to meet an emergency where fear is stimulated, reacts just the same, as if he were in a fight or flight for existence. Whether the fear be physical, moral or mental the reactions are the same. "Nature has but one reaction to fear and whatever its cause, the phenomena are always the same, always physical."

My experience has time and time again proven that exhaustion in the mild but continuous worries of the home or vocation, followed the reactions of fear. That in the major psychoses classed as the infective, exhaustive group, we have, in the history of most cases, worry, anxiety, shock, with persistent and obstinate emotional reactions. In the neuroses, the fatigue neuroses of Dercum, it is not the physical but the emotional stress which has such a fast hold. Back of the physical stress, the tension, the restlessness, the irritability and even physical pain, one must look for an idea. If this idea is found and can be controlled, relief will follow. This is the fundamental fact in the psychology of Freud in his Theory of the Psycho-neuroses. It is the fact, too, which proves that modern life has been producing a type of man peculiarly susceptible from infancy past and beyond maturity, to emotional stress and disorder. The child fails to properly organize that "Hierarchy which the perfect balance in life requires." Mental growth becomes maladjusted, due to fears, suppressed feelings, unnatural experiences and association of ideas, grouped to linger in the mind, to furnish motives for undesirable ideas and physical ills.

7. *The Origin and Nature of the Emotions*, Saunders, 1915.

8. *Physiological Psychology*, Sonnenschein, 1899.

Again, back of these perturbations we note the integrative mechanisms as the physical body responds to the stimuli of the emotions. We note the vicious circle in which nutrition as a part of the circle, suffers by reason of the parts activated by the emotions being those concerned in the nutritional part of the body.

Cannon⁹ has shown that the mechanism is through the autonomic system; that the glands and the smooth muscles of the viscera are peculiarly activated by the emotions. The autonomic system has control over the functions disturbed by the emotions and he has shown how the three divisions of this system are distributed, how they antagonize each other and how innervation results. The action of the adrenals, which produce a substance adrenalin, which in extraordinary amounts affects the structures innervated by the sympathetic (middle division of the autonomic system) as if they were receiving nervous impulses. Cannon has shown that adrenalin is secretion increased in the major emotions and has action in stimulating the mobilization of sugar in the blood, this to be used as fuel in the emergency call for physical action.

Under the continued stimulation of the major emotions, fatigue, exhaustion and death occurs and for physical reasons, which Crile has explained in his theories regarding shock and shows that all exhaustion is central in origin, that is primarily within the brain.

Exhaustion, however produced, whether by fear, worry, physical injury, infection, starvation, insomnia or excessive muscular exertion, the clinical pathology is the same.

Stoddard,¹⁰ in 1912, said that the study of fatigue is yet in its infancy, but that we are justified in saying that all of its phenomena are due to the formation of paralyzing products within the muscular and, perhaps, the nervous system. Crile,¹¹ in 1913-1914, by laboratory methods, proved that the effects of the paralyzing products are found in the Purkinje cells in the nervous tissue, in the liver cells, and in the suprarenal cells. Crile¹¹ has placed exhaustion upon a true determined pathological basis.

His theory is logical and in keeping with the

masterly work of Sherrington in demonstrating the integrative action of the nervous system and of Cannon in his wonderful work showing the physiology of the autonomic system and in his demonstrations in the mechanisms of the major emotions.

The essential lesions of exhaustion are in the brain cells, the liver, the suprarenals and are caused by the conversion of potential energy into kinetic energy (work energy) at the expense of certain chemical compounds stored in the cells of the brain, the suprarenals and the liver. Motor activity as expressed in physical action or emotion, following upon each stimulus, whether traumatic or mental, diminishes by so much the store of potential energy. Stimuli of sufficient number or intensity inevitably cause exhaustion. Nerve cells, if they do not regain their nutritive equilibrium, become irritable, unstable and finally are exhausted.

Exhaustion may destroy nerve cells permanently.

A study of the clinical manifestations of exhaustion will show that they are due to repeated assaults upon the activities of the brain cells, without an opportunity for repair by rest and sleep. The degree of exhaustion is dependent upon the type, duration and intensity of the exciting causes. Also, upon the physical reserve of the individual.

This is largely a question of chemistry of the body which is regulated by its own functions. In the past it has been taught that the organs of the body were largely independent of each other though all were dominated by the brain. The development of a nervous system is a comparative late event in evolution.

In primitive life the stimuli to which most forms of life responded were chemical. The chemical stimuli are retained but where quick reactions are needed the nervous system is used. As an example of both, take the ingestion of food.

The salivary secretion may occur before the food enters the mouth and the gastric secretion is started by the taste of food, its continuence is due to chemical stimuli, while pancreatic secretion can be explained by chemical factors alone. Here we have the transition from a nervous to a chemical method of stimulation, as the need for rapidity of response grows less. This is a

9. Bodily Changes in Pain, Hunger, Fear and Rage, Appleton, 1915.

10. Mind and Its Disorders, Blakiston, 1912.

11. Anoci Association, Saunders, 1914.

good example illustrating the manner in which the nervous system may start a series of events, and the subsequent mechanisms be due to chemical interactions, one organ producing a chemical substance necessary as a stimulant to the next in series. This is the theory of hormone reactions.

in exhaustion may be chemical, morphological or physical and as a rule evidence shows that the change involves all of these qualities. Der-cum¹² says, in exhaustion the muscles undergo striking chemical changes. "Thus the chemical reaction which is neutral or feebly alkaline in a muscle at rest, becomes acid, through the product

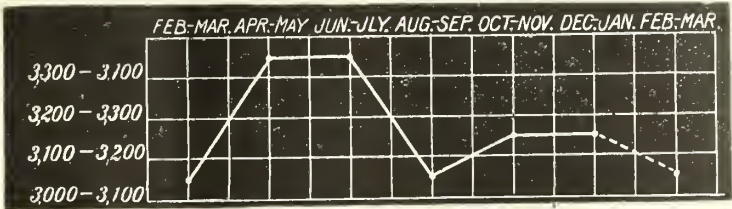


CHART IV —Curve of the Annual Incidence of Insanity in London.
ELLIS—STUDIES IN THE PSYCHOLOGY OF SEX—DAVIS CO.

Internal secretions are simply examples of more widely distributed hormones. The chemical products of every organ become of importance both potentially and actively and offer the wide field for research in the problems of internal medicine.

The inherent apparatus of the body used, on the defense line when attacked, includes this great potential reserve in the biochemistry of the body. This reserve is put at the disposal of other tissues, and enables one tissue when attacked to come to the rescue of another. This reserve is called for in the defense against exhaustion. The

of phosphoric acid in a muscle that is active; there is also in active state a greatly increased elimination of carbon dioxide, while the tissue consumes proportionately more oxygen; further, the active muscle contains more water, it yields an augmented quantity of extractives soluble in alcohol, a lessened quantity of extractives soluble in water, a lessened quantity of substances producing carbon dioxide, a lessened quantity of fatty acids and of kreatin and kreatinin and a lessened quantity of glycogen. The nerve substance, like muscle when at rest, is neutral or feebly alkaline and when active is acid.

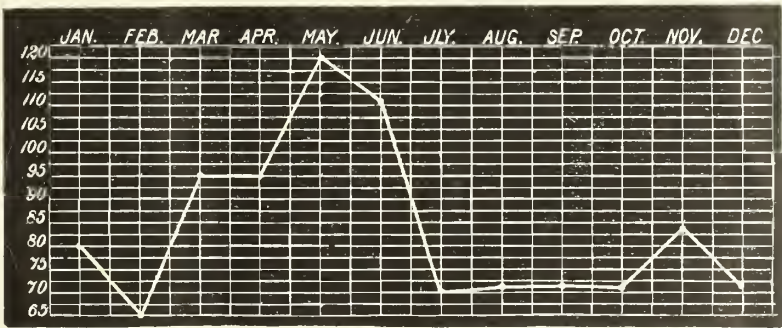


CHART V.—Curve of the Annual Incidence of General Paralysis in Paris (Garnier).
ELLIS—STUDIES IN THE PSYCHOLOGY OF SEX—DAVIS CO.

first call is for the physiological reserve—the good fat and blood and then later we see the double mechanism, viz: the nervous system and the biochemical system called to the colors. We know from observation that the tissue changes

The changes in the nerve cells resulting from function have been studied by Hodge, Crile, Vas Lugaro and others. The chromatic substances increase during rest and diminish under

¹² Cohen's System of Physiological Therapeutics, 1903.

activity. Prolonged activity affects the nucleus, the changes being similar to those in the cell body.

The changes due to the reducing action of fatigue are those of consumption of tissue due to increased oxidation and emphasizes the truism

normally, more or less, regulate expenditure of energy and prevent excessive fatigue.

"Fatigue substances as waste are sedatives upon the nerve centers and are among the direct causes of rest and sleep." Fatigue then, is as much an effect of waste substances as it is of consumption of tissue.

It is the excessive exercise with accumulated waste substances which does harm. This harm is due to the toxic effects, which are those of irritation and consequently the over-excitability prevents rest rather than inducing it. This is Dercum's explanation of nervousness leading up to exhaustion in its varied degrees. Here we have functional disorder due to chemical changes rather than structural. The order of clinical development from mild nervous exhaustion up to and including the profound exhaustion psychoses show first, irritations in the motor mechanisms, then the sensory, then invasion of the autonomic or visceral field and lastly into the mental equilibrium which we designate temperamental or individual.

The integrative mechanism, the reflex principle, is shown in fatigue exhaustion; as extension goes on maladjustments occur one after the other in the order mentioned, viz, motor, sensory, visceral, mental and expression is given to these phenomena in the reactions. The mental state goes through the different stages ranging from mild perturbations of self pity, anxiety to the states of confusion, turbulence, delirium and possibly a collapse delirium with death.

Exhaustion, in its mechanisms, thus is shown to follow definite reactions to environments of climate; to very varied stimuli growing out of the reactions of adaption true to the biological necessities of survival—to reactions from within notably the emotions and maladjustments as physical factors which induce cerebral malnutrition or profound toxic irritants acting chemically due to the general state of denutrition. Exhaustion concerns physicians, one and all, in their clinical problems and an understanding of its mechanisms is necessary in order that the therapeutic attack of the varied problems may be rationally undertaken.

DISCUSSION.

Dr. S. N. Clark, Hospital, Ill.: We are greatly obliged to Dr. Norbury for bringing up this subject; one that is perhaps academic, as he says in his paper, and yet, one that should be very generally studied

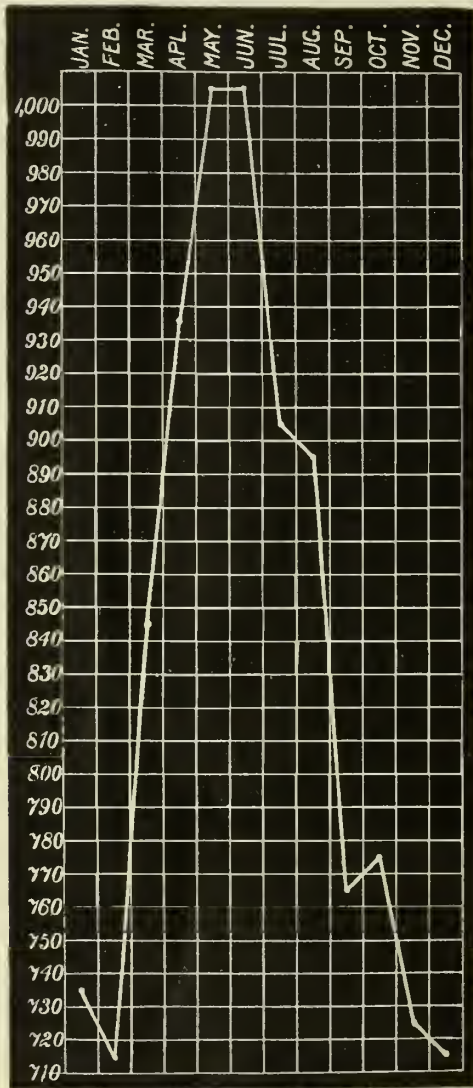


CHART VI.—The Suicide-rate in London.
ELLIS—STUDIES IN THE PSYCHOLOGY OF SEX—DAVIS CO.

that the expenditure of "energy means loss of substance." The expenditure of energy necessarily means the presence and accumulation of waste products.

These in normal amounts are not a menace to function but are really beneficial. Waste products inhibit muscle contraction and thus

and a subject which cannot but be connected with all other subjects that all practitioners have to deal with. That the subject in general is perhaps academic rather than practical is simply due to the fact that we do not know as much about it as we might. In considering the possibility of exhaustion, resistance is the factor on which depends all possibility of exhaustion and the knowledge of the resistance would enable us to advise the patient against placing himself in situations where he might become exhausted. There is a difference in people in this regard. Some are able to withstand all situations in which they are placed, but others are not able to do so. They become worried, exhausted and developed neurosis or insanity upon slight provocation. In the way of treatment: Rest. I might say, however, that the psychosis of which Dr. Norbury has spoken, those which are essentially and commonly thought to be due to exhaustion, make up the larger percent of the admissions to our State Hospitals.

Dr. Patrick: Dr. Norbury's deep and philosophical essay has set me to thinking a whole lot with which I will not tire you, but there was one particular remark he made that especially interested me and that was regarding the relation of fear to exhaustion. I think about 90 per cent of so-called neurasthenia—or psychasthenia, which I like better—is due to fear. It is not the exhaustion of physical work, certainly; it is not the exhaustion of mental work; it is not the exhaustion of intense mental application and long hours of work. It is the exhaustion of fear. The more we analyze our cases and go into the history and the conditions as to habits, thoughts and feelings of the patient, the more we find that to be the case. I will illustrate: Some time ago, when I was much younger, a man came to me who looked very robust and strong but complained of shortness of breath, palpitation, "dyspepsia," profound weakness and dizziness. He had been minutely examined by a distinguished internist of Chicago and this very scientific physician finally told him that there was nothing the matter with him. But the patient said he was absolutely sick, and he was. His disease was fear. A few years ago, I had sent to me the most noted pugilist of his time—a man who had before that, won a fight of international note. This man also was exhausted. He was weak; he could not stand the strain of training and they could not make a match for him; he was brooding, sleepless and depressed. What was the matter with him? Fear! pure and simple. A man who had been fearless under the most trying circumstances. He had got the idea that he was going to lose his mind and he was weak and profoundly exhausted from fear. One more thought: the influence of fear on bodily conditions. A woman came to me to see what I could do for the effects of thunderstorms on her. The storms had this effect: In the first place she could tell when they were coming and became exceedingly nervous. When the storm started she became profoundly prostrated and nauseated and finally she vomited. She vomited repeatedly and violently. In

the meantime, from the usual causes, she had developed a severe valvular lesion. These attacks of vomiting were dangerous. Indeed, she nearly died from the strain of the vomiting upon her heart. Now her disease was fear. As a child she is said to have been struck by lightning. Probably received a fearful fright only. This fear of thunderstorms had developed from that time and had this physical effect upon her to such an extent that on account of her heart, her life was in danger and the only way to save her life was to eliminate her fear which fortunately was done. But it shows the effect of fear in indirectly producing profound exhaustion.

INFECTIONS OF THE EPIDIDYMI WITH THEIR SURGICAL TREATMENT.*

IRVIN S. KOLL, M. D., F. A. C. S.

CHICAGO, ILL.

Professor, Genito-Urinary Surgery, Post-Graduate Hospital and School; Associate Genito-Urinary Surgeon, Michael Reese Hospital.

The anatomy of the epididymis is such that once an infection is carried to it, recovery is most often impossible without surgical aid. In the past eight years more attention has been given to the surgery of this organ and a much better understanding is rapidly developing in regard to the differential diagnosis, which in turn directly affects the prognosis and the post-operative treatment.

A convenient classification of epididymal infections can be grouped into three headings:

1. Pyogenic: staphylococci, streptococci, colon bacilli.
2. Gonococcal.
3. Tuberculous.

Until recently pyogenic infections were considered rare, but with our improved methods of diagnosis it is an established fact that this type of bacterial invasion in the epididymis is not uncommon. At this time it is impossible to give any accurate estimate of the frequency of the pyogenic involvement.

The fact that twenty per cent. of males harbor anywhere from fifteen to thirty different strains of bacteria may be mentioned as a factor in predisposing to the invasion by direct extension. Though these organisms are usually non-pathogenic in the urethra, in the tortuous ducts of the epididymis subjected to even mild trauma, they become pathogenic. Aside from this fact, noth-

*Read at the sixty-fifth annual meeting of the Illinois State Medical Society, Springfield, May 20, 1915.

ing can be even conjectured concerning the etiology of these pyogenic infections. The staphylococcus is most frequently found; next is the streptococcus, which is quite uncommon. Occasionally the colon bacillus is the offender, though rarely in pure culture, usually mixed with the staphylococcus.

The pathogenic process is that of abscess formation, which may be single or multiple. Invasion of the testicle is the usual complication unless the pus is evacuated by operation.

The onset is usually very sudden with sharp, lancinating pains in the scrotum, radiating upwards into the inguinal canal and downwards to the tip of the penis. There are always systemic symptoms characteristic of a septic focus. Locally a tender inflamed mass is palpable, which usually involves the entire length of the epididymis. Fluctuation is felt in from twenty-four to seventy-two hours after the onset. The entire spermatic cord may be involved, giving exquisite tenderness in the inguinal region.

The chronic type is more gradual in its onset. There is tenderness locally, and the epididymis slowly increases in size. The gland feels hard and indurated, but not nodular.

In the acute stage the diagnosis is usually quite clear. In the absence of a gonorrheal urethritis, the above symptomatology is diagnostic of a pus infection.

In the chronic stage the condition must be differentiated from tuberculous infection and from a recurrent gonorrheal invasion, or, rather, an acute exacerbation of a dormant gonorrheal infection. Both of these conditions will be considered in their proper places.

The treatment is clear in both conditions: Rapid incision with drainage in the acute stage, and excision or resection of the epididymis in the chronic stage.

I make bold to state that 98 per cent. of acute gonorrheal infections of the urethra should remain in the anterior portion, providing the patient is seen early and is mindful of the physician's instructions. In nearly every case of posterior urethritis the responsibility either lies with the patient, who neglects himself, or with the physician in charge, who either mistreats or over-treats him. In the presence of a posterior urethritis those factors which predispose to involve-

ment of the epididymis are indiscriminate urethral irrigations, instrumentation and violent exercise.

A pure gonococcal infection of the epididymis rarely, if ever, goes to abscess formation. The testicle is never involved, and the inguinal glands, though tender, never suppurate. An infection or inflammatory hydrocele may be a complication. The lumen of the vas deferens often, though not always, becomes occluded, which naturally produces sterility on the affected side.

If in the presence of a gonorrheal posterior urethritis there is a sudden onset of pain and tenderness in one or both epididymi, the diagnosis is, of course, evident. The height of the inflammation is usually reached by the end of twenty-four hours, when it either persists for five to ten days or slowly diminishes. The one type that may cause some hesitation in diagnosing is the acute exacerbation of a previous inflammation. This may come about several weeks or months after an apparent cure of a gonorrhea. At times this is impossible to clearly diagnose from a non-virulent pyogenic infection.

Considerable can be done by way of prophylaxis. If it is at all possible, a patient who has a severe posterior gonorrheal urethritis should be urged to remain in bed. If this is not practicable, then a properly fitting suspensory should be worn, and my advice is to keep religiously away from all irrigations.

The active treatment can be divided into conservative and radical or operative. The conservative is too well known to need any detailed account here.

My indications for surgical interference are: 1. Continued intense pain for more than twenty-four hours; 2. The better opportunity for preserving the patency of the vas, and 3, recurrent attacks.

The procedure is very simple: Under nitrous oxid anesthesia the epididymis is exposed through a small incision in the scrotum. Multiple punctures are made over the surface of the epididymis, a small piece of gutta serena tissue is used as a drain, and the incision closed with two or three silkworm gut sutures.

Recent literature abounds with startling statistics of cured genital tuberculosis. That tuberculous infection of the male genitals is curable is, of course, a well-established fact, but the past

two years' experience of the writer with epididymal infections raises the question in my mind how often is the diagnosis of tuberculous epididymitis correct?

The invasion of the epididymis by the tubercle bacillus is well known to be usually primary for the genital organs. The origin of the infection is still a matter of indefinite theorizing, but the circulatory and lymphatic systems are the routes through which the tubercle bacilli reach the epididymis. The primary focus in the body may not be demonstrable either objectively or subjectively, but the probabilities are that the peribronchial or mesenteric lymph nodes are the seats from which the bacilli are carried.

The pathology must be considered in two stages, early and late. In the beginning the upper pole usually is felt to be nodular, and but slightly enlarged. The progress is slow, and the entire length of the epididymis is involved before the testis is attacked. Like a tuberculous process at any location, caseation finally results. This stage is very late and except in dispensary work is seldom seen. The disease may either travel up the vas or not. The vas may become occluded early and thus limit the pathology to the scrotum. If allowed to run on, the opposite side becomes involved. Rarely is the disease bilateral in the beginning. Secondary infection is common only in neglected cases, and then very late in the process.

The patient experiences but slight discomfort at the onset. There is tenderness to palpation and a dragging sensation is felt in the inguinal region. There may be a slight afternoon rise in temperature. Otherwise there are no subjective symptoms. Naturally with the increase in the extent of the infection the symptomatology is exaggerated.

An early diagnosis is the all-important point if we are to obtain any permanent results. This diagnosis must be verified by thorough histological examination of the removed tissue, and upon the microscopic findings *alone* can we base our final conclusions, which must of necessity direct the course of the post-operative care. It is impossible to sufficiently emphasize this point. It is now well recognized that many cases of clinically diagnosed genital tuberculosis were never tuberculosis. The patients were subjected to

prolonged tuberculin treatment, were more or less isolated from their families, and were constantly under the mental agony of a recurrence or outbreak elsewhere in the body.

In the presence of a sensitive, inflammatory, nodular, slowly increasing in size epididymis, be highly suspicious of tuberculosis. The tuberculin test by subcutaneous injection beginning with 1/20,000 mgm., gradually increasing at five-day intervals, is a valuable aid. If in doubt, insist upon early removal of the epididymis, and be sure a capable pathologist makes a thorough examination of the specimen.

The gland should be resected along with the vas as far as there is any palpable induration. Within a few days, or as soon as it is definitely established, the process is tuberculous, institute a well regulated tuberculin treatment preferably by placing the patient in the hands of a man who understands this therapy. I am indebted to Dr. Walter B. Metcalf of Chicago, for having accomplished some really remarkable results with a number of my patients, some of whom had a complete involvement of the entire genital tract. This particular phase of the subject furnishes abundant opportunity for a lengthy paper, but has no place here at this time.

To briefly summarize then, let us remember:

1. That we have three distinct varieties of infections of the epididymis, pyogenic, gonococcal and tuberculous;
2. That it may be very difficult under certain conditions to differentiate, particularly between the chronic pyogenic type and the early tuberculous;
3. That in case of doubt insist upon early surgical interference;
4. That upon the microscopic findings alone an absolute diagnosis be made;
5. That the post-operative care and tuberculin treatment must be given properly, and over an indefinite period of time.

25 East Washington street.

TREATMENT AND PROGNOSIS OF SYPHILIS OF THE NERVOUS SYSTEM.*

RALPH C. HAMILL, M. D.

CHICAGO, ILL.

Syphilis is so frequently the cause of disease of the nervous system, and syphilis as we know it in its earlier stages and in other locations is so

*Read at the sixty-fifth annual meeting of the Illinois State Medical Society at Springfield, May 20, 1915.

amenable to medication that we are spurred on by the relief that it should be equally responsive to treatment in the nervous system. Of the last two hundred patients discharged from the male nervous ward at the Cook County Hospital eighty-one or 40.5 per cent. suffered from syphilitic nervous diseases, including, of course, tabes dorsalis and dementia paralytica. Forty per cent. of the cases to be treated were syphilis. A great majority of these cases had shown symptoms of syphilis of the nervous system, months and years before entrance. If they had been treated at this earlier period, vigorous, competent treatment might have prevented the disabling lesions which were bringing them into the hospital. For example, a man who at one time was an editor on one of the leading papers of Chicago, twenty-two years ago, at the age of thirty, had a diplopia coming on with some ham colored spots on the skin. The diplopia lasted only a few weeks and was forgotten. Six years ago the diplopia returned but even before that he had begun to go down the scale of business efficiency. Two years ago his legs gave out and now he is simply a pitiful wreck, confined to a wheeled chair and suffering with complete bladder incontinence. If he could have had proper treatment at the time of his early diplopia he probably would have continued to rise in this profession and would today be able to walk into a toilet and relieve himself with complete satisfaction.

So with the other eighty cases discharged in the course of two months. The great majority of them showed danger signs of nerve involvement at an early period of their disease, at a period when their lesions were confined to collections of new tissue cells and wandering cells about small blood vessels, acute inflammatory lesions without any of the scarring degenerations of the later manifestations of syphilis.

The recognition of the early signs of involvement of the nervous system is, therefore, of prime importance and thorough treatment, during this early period, controlled by Wassermann tests on both blood and spinal fluid, is the only really satisfactory treatment of the disease. It is satisfactory at this period because of the accessibility of the disease processes. They are probably entirely inflammatory and limited to the vascular and perivascular tissues. Such vascular inflam-

matory lesions are readily influenced by antisyphilitic drugs circulating in the blood stream.

The recognition of the early signs of syphilitic involvement of the nervous system is of importance for another reason. These early symptoms almost always clear up very readily, no matter what the physician may consider them due to and no matter what he may do for them. The fact that a diplopia entirely disappears in a few days to a week or two and the only medication has been some drops of potash two or three times a day, seems to justify the patient into thinking it was nothing serious. So he quits his medicine and considers himself quite free from future danger. Very often the patient is not the only one enjoying this false sense of safety merely because the discomfort due to a facial palsy or a diplopia lasted only a week or two.

Among the early symptoms of nervous syphilis are to be mentioned headaches, disturbances of vision, including diplopia, facial paralyses, pains, especially in the legs, disturbances of micturition, "strokes," and dizzy attacks.

The headaches are severe, they come on at any time, though perhaps rather more frequently at night. The pain is bursting, dull and heavy, with but rarely any very sharp pain. It is usually bitemporal or frontal, but may be occipital and run down the back of the neck. After aching some time the scalp usually becomes tender. There may be nausea, but vomiting is very infrequent except when the headaches are very severe. Such a headache lasts but a few hours. The headaches usually come in periods, daily for a week or two.

The disturbances of vision may be due to a paralysis of an internal muscle of the eye ball. For instance, a man thirty-five years of age, one year after chancre had an attack of vomiting with much retching, then after a few hours the vision in the right eye became blurred. Vision returned to normal in two months and the patient was able to continue in his occupation as an umpire in one of the big leagues. Six years later the blurring returned, first in the right eye, then in the left. Upon examination six months after this reappearance, pupillary reaction was gone to light in the right eye, sluggish in the left, and was only fair to convergence. In another man this same blurring coming on about five years

after a chancre was found to be due to a dilated right pupil. Since there was no diplopia in the first case this paralysis of the intrinsic eye muscles, as shown by the dilated paralyzed pupil was in all probability the condition causing blurring.

When carefully inquired for short attacks of double vision are rather frequent in the early history of tabetics. They pass off in the course of a week or two and are forgotten until direct questioning recalls them.

A patient of mine developed a complete facial paralysis while the chancre was still present.

A man who at the age of twenty had the primary lesion at twenty-five would lose his water in bed if he had had three or four beers during the evening.

A woman developed a primary lesion on the lip at twenty-four. After taking mercury by mouth for a year she developed severe headache for several weeks, then woke one morning to find the entire right side paralyzed. Two weeks later a numbness came on in the right hand, ran up to the face and for an hour she was unable to speak. The paralysis passed away in six weeks.

Head and Fernsides mention as early signs of involvement of the nervous system changes in personality, sleeplessness and shivering attacks. The shivering attacks, according to the two cited cases, occurred only after several years had elapsed since the initial infection.

The early recognition of syphilitic nervous disease and its thorough treatment striving for eradication is the really proper treatment.

When the early stage has slipped by and the patient presents the later disease pictures of cerebrospinal syphilis, of tabes dorsalis, and general paresis, what is to be done for him?

His disease is still syphilis and must be treated as such.

What are the best methods of treatment?

In early syphilis irrespective of location the following statistics are of great interest in showing the difference in results in different forms of treatment. Of 125 cases of syphilis in the English army thoroughly treated with mercury 106 showed symptoms within a year and a half after treatment; of 208 cases treated with salvarsan intravenously only thirteen showed such symptoms, eighty-five per cent. against six per cent. In some of these cases the patients had had six to nine mercury rubs, a negligible number. Of 280

cases treated for two years with mercury and then allowed to rest for three months, forty-two per cent. showed a positive Wassermann at the end of the rest period; 103 cases treated with salvarsan and a Wassermann taken four to seven months after the last dose, only seventeen per cent. showed positive.

These are figures striking and strongly suggestive even though not conclusive. The intravenous salvarsan medication accomplishes results not obtainable with mercury alone. Of course, we cannot conclude that the cases cited above showing such good results from salvarsan are never going to relapse, but they hold out much greater hope than those treated by mercury alone.

Much such statistical evidence could be read to show the superiority of salvarsan to mercurial treatment in the early periods of the disease. We are now quite satisfied that late syphilis, that is, locomotor and paresis, is nevertheless syphilis, and so it would seem that intravenous salvarsan would be the medication of choice at this stage also. These diseases have been intensively treated with salvarsan and neosalvarsan intravenously and the consensus of opinion is that in paresis nothing can be done, but in tabes improvement is frequently seen. Pains have been made much less severe, or even stopped, control over the bladder reflex has been re-established and even in some cases there is thought to be some improvement in the gait.

In explanation of the want of effect of treatment in paresis, the experiments of McIntosh are important. Rabbits were given daily injections of neosalvarsan intravenously, some of them two injections a day for four days. Their brains and livers, washed free from blood, and the blood itself were then examined for arsenic. Practically no arsenic was found in the brain, while large amounts were recovered from the liver and blood. From this result it might be thought that there was some lack of ability of brain tissue to combine with arsenic. So blood-free rabbit brain was allowed to stand for some time in a neosalvarsan solution, was then carefully washed and tested for arsenic. Plenty was found. This showed that brain tissue itself was able to take up arsenic. Therefore, it is concluded that in some way the walls of the blood vessels in the central nervous system prevent the passage of

neosalvarsan from the blood into the brain and cord tissue.

It was because of the failure of effectiveness of intravenous medication that intraspinal and later intracranial were undertaken.

Because of unfavorable results due to the irritative action of arsenical solutions when injected directly into the lumbar-dural sac the Swift-Ellis treatment, first used by Marinesco, was developed. It has been found, however, that this treatment is frequently as unpleasant to the patient as the direct injection of neosalvarsan if the latter is used in small enough dosage and is sufficiently diluted with spinal fluid. It is my belief, founded on observation of intraspinal treatments in private practice and in the Cook County Hospital, that three mgm. is the highest dose given with safety, and that it should be diluted in at least fifteen, preferably twenty, c. c. of spinal fluid. When this dosage, in this dilution is used, the pain which be but little, if any, worse than that experienced follows most intraspinal treatments seems to following the Swift-Ellis procedure. It has the great advantage of being a method in which you know the exact amount of arsenic you are giving the patient, whereas in the Swift-Ellis method the amount is largely conjectural. Occasionally even with this small dosage, unfortunate results are seen. The one accident in my experience was in a paraplegic who, following his first treatment, became worse. His paralysis increased rapidly, there was complete loss of bladder control coming on in a few hours and death occurred at the end of two months from a tremendous sloughing bed-sore involving the sacral and gluteal region. In this case, however, an early one in my experience, the dose was diluted with only nine c. c. of spinal fluid and the return injection was made more rapidly than usual: only about thirty seconds were used in injecting the dose into the lumbar sac. This relatively high concentration and the rapidity with which the injection was made caused the roots of the cauda equina to be bathed with a strong arsenical solution; did not give time for the arsenic to diffuse sufficiently.

I am as yet uncertain as to which method is to be recommended, the Swift-Ellis or the direct injection according to some modification of Ravaut's method. In the material I have observed good results have been obtained by each. Both

have failed, and in both there have been accidents. Either of these methods or that of Marinesco of using salvarsanized serum, the salvarsan being added to the serum after the blood has been removed from the body, are theoretically to be recommended. No treatment can be expected to restore lost tissue and so cannot be expected to cure advanced degenerated disease, advanced tabes or paresis.

In those cases where the symptoms are those of meningeal irritation: pains and paresthesias, intraspinal treatment is to be recommended. For example, one patient who because of the severity of his pains had been unable to sleep for two months without an opiate was entirely free from pain within thirty-six hours after the first injection of two mgm. given according to a modified Ravaut technique. Two other doses were given at intervals of three weeks. In each of the three treatments the remainder of 0.75 gms. was given intravenously. The patient remained free from pain for four months. The pains then returned, though not so severely as before. They responded fairly readily to three more intravenous treatments. This was a man whose chance had occurred twenty-two years previously, whose pupils were strongly suggestive of Argyll-Robertson pupils, who had a tremor about the mouth, lively reflexes, the left Achilles reflex brisker than the right, and with positive findings in the spinal fluid: Wassermann plus, eighteen cells per c. mm. and Nonne plus. Similar histories are to be read in cases treated by the Swift-Ellis and Marinesco methods.

Prognosis in case of the irritative lesions is rather good. Pains can usually be well controlled. Bladder disturbances also are well influenced and, I believe, do not constitute contraindication to intraspinal treatments. I think we need still more statistics before definitely deciding which is the particular form of intraspinal treatment to be recommended. Any modification of the direct intraspinal injection should be accompanied by an intravenous injection.

None of the methods of treatment have had a marked effect in that form of syphilis of the brain giving the picture we generally call by the name of paresis. Headaches, diplopias, aphasias, facial palsies, and slight strokes have all cleared

up rather readily under mercury, potassium iodide, and arsenic. But in their clearing up have they betrayed us into faith in the cure of the syphilis? The body fluids contain or develop powerful spirochetocidal substances as shown clearly by the fact that whereas the body is flooded by spirochetes in the secondary period and the disease is highly contagious, in the tertiary period spirochetes are found only with difficulty and the danger of contagion is very much lessened. But is it perhaps not true that just as the above-mentioned symptoms, headache, etc., disappear without treatment, leaving spirochetes to produce paresis, they may also disappear under medication and leave the same disease producing agents? The body of a syphilitic having a rash harbors millions of spirochetes and as the patient recovers millions are destroyed, but some are left to produce tertiary and para-syphilitic lesions. When medication is added to the inherent germicidal activity of the body, is the destruction more surely complete? I believe it is in those cases where the spirochetes are accessible.

In the early stages of the disease the germs are accessible, but in the later stages they penetrate into the parenchymatous structures of the brain and cord, and because of the impermeability of the cerebrospinal vessels germicides circulating in the blood have no effect upon them.

It has been thought that the cerebrospinal fluid acts as a lymph to the tissues of the brain and cord, and as such, bathes the parenchyma. Further that drugs introduced into this fluid have an opportunity to reach structures inaccessible through the blood. This is the basis of the intraspinal treatment. It is also the basis of intracranial treatment.

Germicidal action is a quantitative affair. There must be enough of the germicide in an organ to reach all parts in sufficient concentration. Hence, Horsley was led to advocate washing the brain through a large opening with mercurial solutions; Marinesco was led to advise the injection into the skull cavity of salvarsanized serum, salvarsanized in vitro. Others have followed their leads. The statistics are as yet too meagre to warrant recommendation.

The ideal method would be to inject the germicide into the lateral ventricle near the choroid plexus whence it will be carried by the natural

flow of the fluid through the ventricular system and out on to the cortex to be there absorbed.

This route has been tried as well as the injection subdurally onto the cortex. Neosalvarsan dissolved in spinal fluid, serum salvarsanized in vitro and in vivo have all been tried without as yet any striking results. Much more work is necessary to determine the possibilities of the intracranial method.

To summarize: Syphilis of the nervous system is to be treated as syphilis whether early or late. If early, intravenous methods probably suffice, but they must be controlled by Wassermann on the blood and spinal fluid. The method producing the most favorable results is an intermittent one: three or four injections at four to seven-day periods, two or three months of rest with intramuscular injections of mercury and then another and even a third series. Late nervous syphilis should receive both intravenous and local treatment, if we may so term subdural injections.

DISCUSSION.

Dr. Krause, Jacksonville: I just want to relate a case that impressed upon me the importance of the early diagnosis in syphilis of the nervous system. A man consulted an oculist for some defect of vision. Later on he consulted a physician, who discovered he had pain in the extremities and an arch was prepared, which did not relieve the pain. Later the man developed tabes. The administration of salvarsan by the Swift-Ellis method relieved the pain, and the man is in a very much better condition, but the point I wish to emphasize is early diagnosis and early thorough treatment and constant subsequent observation of those cases. In this case, the Wassermann was present both in the cerebro-spinal fluid and blood. At the present time the Wassermann is negative in the fluid, but positive in the blood.

PRINCIPLES UNDERLYING THE TREATMENT OF SEPTIC PERITONITIS.*

J. E. ALLABEN, M. D.,

ROCKFORD, ILL.

Surgeon to St. Anthony Hospital.

It is my purpose to discuss in this paper the most important principles underlying the treatment of septic peritonitis rather than to enter into detail of the methods for carrying out such treatment. Septic peritonitis is spoken of by most authors in contrast to another variety of in-

*Read at the sixty-fifth annual meeting of the Illinois State Medical Society at Springfield, May 19, 1915.

flammation in the peritoneal cavity, that is *aseptic* peritonitis or the so-called idiopathic peritonitis.

Aseptic peritonitis is supposed to be caused by chemical and mechanical agents such as retained sponges, drainage tubes, instruments, internal hemorrhages, ruptured tubal pregnancy, etc. But we believe that the term *aseptic* peritonitis is a misnomer.

Septic peritonitis is always caused by pathologic microorganisms and it is rational to assume that all inflammations of the peritoneum are septic.

It is much more reasonable to suppose that the traumatism produced upon the delicate peritoneum by these agencies leaves behind a greater or lesser number of necrotic endothelial cells or traumatized cells which means a lowering of their resisting powers thus offering a favorable atrium for entrance and growth of microorganisms.

These microorganisms may be supplied from the gastrointestinal tract or other viscera, or from germs left in the peritoneal cavity after operation, or from the blood stream. The injuries inflicted upon the peritoneum from such sources are usually so limited in area and the peritoneal cavity so capable of taking care of itself under ordinary circumstances, that such infections remain local but nevertheless *septic* in their origin.

The most common sources of peritoneal infections are: appendicitis, gall bladder infections, perforating ulcers of the stomach and duodenum, stab wounds involving the gastro-intestinal canal, intestinal perforation in typhoid fever, intestinal obstruction due to hernia, intussusception, volvulus and adhesive bands, and rarely embolism of the mesentery arteries and veins, torsion of the pedicle of tumors, traumatic rupture of abdominal viscera, ruptured pus tubes, streptococcic infections following infection of the uterus and its appendages.

The microorganisms most commonly found as the exciting cause of septic peritonitis are: *Bacillus coli*, streptococcus, staphylococcus, gonococcus, pneumococcus and the *B. pyocyaneus*.

A rational treatment of septic peritonitis presupposes a good general knowledge of the pathological process going on in the body during the progress of the disease. First of all then we are cognizant of the fact that in septic peritonitis we are dealing with a condition caused by the in-

vasion of the peritoneal cavity by microorganisms. What is the conduct of these organisms and of the peritoneum?

1. There is produced a violent inflammation of the peritoneum, the physical appearance of which, as we usually see it, is due to a powerful reaction of this membrane to fortify itself against the invasion of the deadly microorganisms. This reaction results in the production of the serum, pus and fibrinous exudate observed in these cases.

2. There is rapid absorption of bacteria through the lymph channels of the diaphragm and omentum into the blood stream producing the grave constitutional symptoms of the patient, too frequently resulting in death.

It is not the absorption, however, of the toxins from the infected peritoneal cavity, but the presence of bacteria in the blood which, being destroyed by the phagocytes, liberate their endotoxins in the blood with such deadly effect. Dr. B. H. Buxton¹ has so forcibly established these facts in animal experimentation that I speak of them at some length, although I previously presented them in an article on "Intestinal Perforation in Typhoid Fever." "These experiments,"^{2,3} demonstrate the extreme rapidity with which bacteria injected into the peritoneal cavity are taken up; within five minutes they are found in the blood in great numbers, and in smaller numbers in the liver and spleen. Even greater numbers are found in the lymph nodes of the anterior mediastinum, which they reach from the diaphragm, where absorption occurs chiefly and most rapidly. A large number of bacteria are also entangled by a fibrinous exudate on the surface of the omentum, where many are taken up by phagocytes, while some enter the omental lymphatics and are absorbed by this route. However, there seems to be practically no absorption of bacteria by any other part of the peritoneum besides the diaphragm and the omentum; the parietal and visceral peritoneum and mesentery do not seem to possess this function to any considerable degree.

Animals which die as a result of intraperitoneal injections of typhoid or colon bacilli succumb either about two hours after the injection or else survive

1. Buxton, B. H.: Jour. of Med. Research, 1906, XV, 3-18 and 1907, XVI, 17-24.

2. Allaben, J. E.: Intestinal Perforation in Typhoid Fever; Its Diagnosis and Surgical Treatment. Published complete in reprint, Abstracted Jour. A. M. A., Aug. 17, 1907.

3. The Jour. A. M. A., May 4, 1907 (editorial).

for twenty-four hours. The reason for this seems to be as follows: The colon and typhoid bacilli contain a large amount of intracellular toxic materials (endotoxins) which are not liberated until the organisms are disintegrated. Consequently, when an animal takes up a great quantity of these bacteria from the peritoneum and destroys nearly all of them within the space of an hour or so, an overwhelming dose of the poisonous intracellular toxins is liberated and the animal succumbs at once, in spite of the fact that it has killed most of the bacteria that have been injected. In case the dose of endotoxins thus liberated is not fatal, the animal may recover or may succumb to a later multiplication of the bacteria twenty-four hours later after the injection. With the streptococcus the case is different, for this organism is not so rapidly destroyed after injection, and hence a primary overwhelming with endotoxins does not occur; as a result, death does not follow until there has been time for an extensive multiplication of the cocci, after twenty-four hours or more.

In any event, these experiments emphasize the importance of the measures which are now being so successfully adopted by many surgeons, the aim of which is to keep bacteria away from the diaphragm by means of posture and the avoidance of irrigation.

The understanding of the pathology of diffuse septic peritonitis gives us an index to its treatment, which may be epitomized as follows:

1. Releasing from the peritoneal cavity infectious material held under pressure.

2. Repair or correct with the greatest speed, and the least intra-abdominal manipulation possible, the lesion responsible for the infection.

3. Drainage of the peritoneal cavity, an important feature of which is maintaining the patient in Fowler's position.

4. Dilution and elimination of toxins and anticipating shock by the introduction of large quantities of physiologic salt solution into the circulation, best accomplished by some forms of enteroclysis. These rules are pretty generally accepted by the profession, but there is still some difference in opinion as to the best method of carrying them out.

When pus is confined in the peritoneal cavity all agree that it should be evacuated. But it should be borne in mind that it is not the pus itself that is dangerous but the fact that in the abdominal cavity it is held under pressure, which encourages absorption of microorganisms and by the disintegration of these organisms by phagocytes, the liberation of their endotoxins into the blood stream.

The old idea that the abdomen must be freed

from pus is erroneous. Relieve the intra-abdominal pressure by incision, eliminating the original focus of infection, place the patient in the Fowler position so that drainage will be away from the diaphragm and you may be sure that you have placed the subject in the best possible attitude for recovery.

Among new methods of treatment may be mentioned the use of ether. Dr. M. Morestein,⁴⁻⁵ of the Hospital Temon and Dr. Souligaux of the Hospital de la Charite in Paris, were the first to use ether in the peritoneal cavity for septic cases. It is not used as a wash or as a lavage, but a considerable quantity of it is poured into the abdomen and the wound immediately closed without drainage. Dr. Broca⁶ of Paris, also reports that he had used ether in many cases of diffuse septic peritonitis and had been struck by two facts: the facility with which it is borne by children and the surprising results. M. Morestein observed that ether acted marvelously in appendicular and in all other forms of peritonitis and that it is a peritoneal antiseptic.

Dr. George De Tarnowsky⁷ of Chicago, who has used the ether treatment in this country, says: "After using it in considerably over one hundred and fifty cases, I am more enthusiastic than ever. I began using ether in peritoneal cases in August, 1913. My present position regarding the advantages of ether used intraperitoneally is as follows:

1. It induces an immediate and intense hyperaemia which increases local leucocytosis; this hyperaemia does not persist long enough to produce adhesions between peritoneal folds.

2. It is a bactericide. Repeatedly have I sent two test tubes to the laboratory when operating on cases of peritonitis. One tube contained pus only, the second tube pus plus 1 c.c. of ether. In no case has a culture been obtained from the pus plus the ether tube.

3. It is analgesic. Patients with ether in their peritoneal cavities suffer less pain and have less nausea or vomiting than under any other form of treatment.

Clinically no cases have developed post-operative symptoms pointing to the formation of adhesions. Experimentally, we are at present endeavoring to produce peritonitis in animals and then using ether to overcome the infection. In a normal peritoneum (in animals) the absorption of ether is so rapid that they

4. Presse Medical, Jan. 11, 1913. Practical Medical Series, 1914, 11, 352.

5. Bulletin Et Memoires Societe de Chir., May, 1913; Practical Medical Series, 1914, 11, 353-354.

6. Ibid. Oct. 15, 1913; Prac. Medicine Series, 1914, 11, 353-354.

7. Personal letter.

all have died within two hours, so it has thus been impossible to prove the presence or absence of adhesions. Regarding drainage, I only admit of one indication at present, and that is gangrenous tissue which I cannot cover up, for instance, a gangrenous cecum where fecal fistula must of necessity form. All other cases are closed without drainage. I can refer to fifteen cases of general or local peritonitis in private practice—all operated on with one death occurring six hours after operation, patient being manifestly overcome by toxins on admission to the hospital.

At Cook County Hospital I have had thirty-nine cases of general peritonitis with seven deaths—all occurring within 24 hours after the operation. This makes a total of 54 cases with an apparent mortality of 14.8 per cent. The majority of these cases died within six hours after operation; in other words, they were so toxic on entering my service as to make them hopeless risks. The forty-six cases who survived the first 24 hours all lived.

I was much impressed by a case shown me by my son, Dr. Gerald R. Allaben in Cook County Hospital in the service of Dr. De Tarnowsky. The man's abdomen had been run over by an automobile. An intestine had been completely severed. Dr. De Tarnowsky united the intestine, poured ether into the abdomen and closed the wound without drainage. The case made an uneventful recovery. I myself have used ether as a prophylactic in two recent cases. One case was a woman with extensive pelvic adhesions where in releasing an intestine bound down to the pelvic wall, I opened the intestine in two places. A small amount of fecal matter escaped. I repaired the injury and poured four ounces of ether into the pelvis and closed without drainage. The second case was a young man with gangrenous appendix and circumscribed abscess beneath the cecum. The right iliac fossa was filled with ether and a cigaret drain brought through a stab wound outside of the incision. The incision was closed and the drain removed on the third day. Both cases made prompt recoveries.

Of course ether has not yet been used long enough to give it a correct standing. There are not statistics enough obtainable at the present time to show the exact results or to compare with results obtained by other most approved methods of operation.

Dr. J. B. Murphy's last report⁸ of cases in sep-

tic peritonitis made some years ago gives his mortality rate as 3 per cent.

It is quite probable that in the future the mortality rate in ether cases will be lowered. But if the recovery rate only reaches a percentage equal to that of the best operators who do not use ether, there will still be a credit to the side of ether, for the abdominal wound can be immediately closed without drainage, thus greatly reducing the danger of post-operative hernia.

Irrigation of the peritoneal cavity is still practiced by some surgeons. So good an authority as Dr. Arthur Dean Bevan recommends it in selected cases and by means of certain approved methods. But if the principles we have laid down regarding the absorption of bacteria in the abdominal cavity are correct, we can not see what ground the irrigation theory has to stand on.

Whether drainage is used or not, septic cases of peritonitis should be kept in the Fowler's position. Proctoclysis should be maintained and the simpler the method of giving it, the better. One principle in its application should not be forgotten, viz: that no cut-off or compression of any kind should be used on the tube that carried the fluid from the reservoir to the rectum. The flow should be regulated wholly by gravity. If so arranged the patient when straining will force the gas and fluid back into the reservoir and not into the bed.

On general principles the proper selected serums and autogenous vaccines are indicated, but that they are really curative in these cases has not yet been established as a fact.

Surgery has had and will continue to have her wonderful triumphs, but never in the history of science has medicine been so close a rival. She also is having her triumph, especially along the line of preventive medicine. She has banished smallpox, diphtheria, tetanus, yellow fever, malaria, typhoid fever and many other diseases. To be sure we still have some of these diseases with us, but medicine has laid the magic cure, or the means of prevention at our doors. And after all, this is the goal towards which surgery must ascend. The great altruistic spirit of surgery is toward prevention, toward prophylaxis.

In what family in years past has not the hand of death touched a beloved member who, had we

8. Personal letter.

possessed the knowledge we now have of medicine and surgery, might be living today.

Septic peritonitis resulting from certain causes may be listed as a preventable disease. Especially is this true as applied to appendicitis. Compared to former years, but few die of peritonitis of appendiceal origin. Yet the number is greater than it ought to be. In such a case we feel that a blunder has been committed somewhere, either by the physician, the surgeon or the family. The remedy is the acquiring by the physician and surgeon of an acumen sufficient to make an accurate and early diagnosis and the education of the public so that an early operation will be demanded.

When we arrive at this happy state, peritonitis from appendiceal origin will have become an extinct disease.

DISCUSSION.

Dr. George de Tarnowsky, Chicago: When I sent my preliminary notes to Dr. Allaben, I was not yet able to answer the question of the experimental evidence which we had on this subject. I can answer it now. In the past six months we have been carrying out a series of experiments in the research laboratory of the University of Illinois. We began by having very poor results because we were not allowing for the evaporation of the ether. The ether had been injected into the peritoneal cavity by means of a hypodermic syringe and our animals all died within a few minutes. Following the suggestion of Santee of Lyon, France, we finally made normal laparotomy incisions, introduced the ether and allowed it to come to the boiling point (ether boils at 84 Fahr.) and practically vaporized the ether before closing the cavity. Then we found that our animals lived, and we were able to study the effect of ether on the peritoneum. Following the successive stages of an intense hyperemia, the peritoneum returned to its normal condition, macroscopically as well as microscopically, as early as the eleventh day. Clinically I have yet to see a case where there is any evidence that post-operative adhesions have formed, and I have watched all private cases more closely than I can at the County Hospital. In the use of ether in the peritoneal cavity there were two questions to be answered. First, is ether injurious? I think experiments absolutely bear out the fact that ether is not injurious. Second, does it benefit the patient? Clinically I am satisfied that it does do good. During the last six months I have been making a leucocyte count within 24 hours after operation, in addition to the pre-operative count, and have invariably found an increase of from 2,000 to 2,500 leucocytes following the use of the ether. In other words, ether causes a hyper-leucocytosis which, in my opinion, is the bene-

ficial factor. It will take some time to place ether lavage on a sound clinical basis. So far as my records go, they are in favor of it. I have lately gone through the Cook County Hospital records from December, 1912, to December, 1914, and have examined every case of general peritonitis, ruling out all cases where there was no free pus in the peritoneal cavity. In this series of cases, my mortality was 14 per cent, very much less than that obtained without the use of ether. In the last two years I have made a point of going to the County Hospital for every case of general peritonitis where the attending man could not come, usually at night time, so that I have had much more than my share of such cases. Both from a clinical and experimental point of view I am satisfied that we have in ether a good adjunct to our treatment of general peritonitis. We want more experimental evidence, if possible. We are now going to develop general peritonitis in animals and then treat them with ether. I intend to work this out further and have a final statement within one or two years. I can now affirm that ether is not injurious and that, clinically, my results are infinitely better now than they were before. I also want to add that I am closing these cases with one exception, and that is where there is dead tissue.

Dr. Honeck, Chicago: I am very much interested in this subject, but think it still in the experimental stage. French clinicians, in addition to using ether, use other methods also. I think we could lessen the trouble by quicker and more precise diagnosis and by quick operations. Let there be no needless manipulation.

Dr. Byrne, Chicago: We know that the case of peritonitis that gets well is the case in which you get secretion in which the toxins can be carried away through drainage or taken care of by the body itself. We are not draining as much as we used to. As to the use of ether, I have not used it and I am not going to, but it seems to me that the thing you could accomplish by ether would be to cause a little irritation of the peritoneum. Where does the ether go? You put in only a few ounces, and it can only come in contact with the small area of the cavity. I do not think it will cause a great amount of congestion. Now as to adhesions. The doctor says he has none. You open the peritoneal cavity in a year and may absolutely not have one sign of adhesions. I have gone back in and you could not find any to indicate that there was previous inflammation—cases I had gone into before. The question, of course, of position is important. Also it is important to get the proper elimination.

Dr. Allaben (closing): In the matter of adhesions, we know that if you operate in the abdominal cavity and you open the abdomen a few days or week or so afterwards, you may find considerable adhesion, but if you open it six weeks afterward you will not find any. Nature clears them up.

TRAUMATISM AS AN ETIOLOGICAL FACTOR IN PULMONARY TUBERCULOSIS.*

J. W. PETTIT, M. D.,
OTTAWA, ILL.

Clinically this subject is not of very great importance as it does not involve any new principles or methods of treatment. As a medico-legal problem, it is assuming very large proportions, hence the necessity for extreme care on the part of medical men in preparing themselves, when called into the courts, to meet the legal issues involved.

The number of cases coming under the observation of any one individual, no matter how large his experience, where traumatism is suspected as a factor, is too small upon which to base generalizations. Out of 1,700 cases treated by me, covering a period of ten and a half years, I have only seen two in which traumatism was a suspected factor, therefore we are compelled to depend upon the reports of many observers in making an estimate of its importance.

I have made a very complete survey of the existing literature on this subject and find that it is surrounded by very scant literature for the general text, and even the general treatises on tuberculosis give but little attention to it. A preliminary compilation of the literature on tuberculosis recorded in the catalogues of the Surgeon General's Library, the Index Medicus, and Index-Volumes of the more important medical serials and periodicals and in the available bibliographies of tuberculosis show, however, that some 200 papers on "Traumatic Phthisis" have been published since the discovery of the tubercle bacilli as the primary cause of tuberculosis. For practical purposes, however, the literature of the last 20 years suffices to determine the status of the question as it now appears. A great many authors have recorded cases and drawn conclusions on their significance. This paper is based upon an examination of some 300 publications on this subject in English, German, French, and other languages.

The greater portion of this literature has been found vague and general in character. I have culled from all sources, including medico-legal organs—every case that seemed worthy of notice

indicative of a distinctly scientific or practical value. It is not difficult to see that in spite of the assertions of some authors there has been found no case where a trauma was etiologically connected with pulmonary tuberculosis unless we deny the activity of the tubercle bacilli as the primary cause of all tuberculous lesions. This conclusion might have been foreseen. As for the clinical manifestations and the legal aspects, the cases on record vary greatly. Each presents some peculiarity, and it seems impossible to define even one type, but the subject as a whole appears to me not to have reached the state of absolute conclusion based upon logical definitions. Each case must be judged in a medical, as well as a legal way, upon its own merits.

Many writers have expressed the opinion that there is an etiological relation between trauma and pulmonary tuberculosis but it has usually been based upon a personal experience in the observation of a few cases. Some of the opinions expressed are dogmatic in the extreme, as for example a German author of some prominence cites a case of a workman who suffered a violent fall on the back. Five days later developed pneumonia; two months later sputum was found to contain tubercle bacilli. Upon this data he states that "the proof hitherto wanting in medical literature of a trauma causing phthisis in a previously healthy subject is established." A very large number of writers who maintain that there is a direct relation, base their conclusions upon just such insufficient data as the case cited.

We have passed that stage in medicine when a snap shot diagnosis or the *ipse dixit* of any man, however prominent, is accepted as conclusive. Such deductions as these not only tend to confuse, but are discreditable to presumably scientific men. By the same process of reasoning we could make traumatism an etiological factor in typhoid fever or any other infectious disease. There is no error more commonly made by careless and unscientific observers than mistaking co-incidences for causes, basing their opinions on nothing more substantial than a *post hoc, propter hoc*, process of reasoning.

As an indication of how rarely traumatism is even suspected of being a contributing cause in tuberculosis, it is sufficient to cite the observations in the Leipzig University Clinics of 6,000 cases of tuberculosis. In 35 cases there was some evidence

*Read at the sixty-fifth annual meeting of the Illinois State Medical Society at Springfield, May 19, 1915.

of trauma. In 7 of these cases the trauma assumed some importance as an etiological factor, but in none of the 7 cases was it possible to adduce absolute proof of intact condition previous to the trauma. In none was it possible to assign to the trauma the office of a primary cause of phthisis.

It is not practicable to give more than a brief resume of the views of different authors.

Guder says: "Trauma must be caused by infected object communicating the disease. Trauma itself not responsible for phthisis."

Curschmann says: "Doubtful whether trauma alone will give rise as a cause of phthisis. The origin of the tuberculosis must be due to a specific infection." He further says, "Congresses and reports yield no ease of traumatic phthisis."

Ledderhose says: "It is impossible to indicate more than a *probability* of an etiological connection between trauma and tuberculosis, and *this only when plausible facts and data are adduced*."

Unfall concludes from a description of the subject based on large clinical experience and the literature which he cites, that "Traumatic conditions as causes of organic diseases become less and less recognized and are referred to the subject of general and specific effects of injuries."

Brouardel says: "Penetrating wounds of the lung are occasionally followed by tuberculosis. Demme has reported that in 17 out of 159 such cases, a successive phthisis developed." He also gives a careful analysis of 79 cases of contusions of the chest from which he concludes that "a contusion of the thorax does not create a tuberculosis; it unmasks a latent tuberculosis suspected or not; the traumatism is the awakening factor. * * * When a contusion happens to a person having a pulmonary tuberculosis, although it is impossible to say what will be the course of the tuberculosis in any given individual, its evolution is often hastened."

Gebauer, Heimann, Weiler, Kunow, Tessier, Curschmann, and Stern all insist that a perfectly healthy condition of the lungs is not proven by a full capacity for work.

Birch-Hirschfeld found in 826 post mortems after accidental deaths that 20 per cent showed fresh or healed tuberculous lesions of persons who, while alive, never had given any symptoms of tuberculosis.

As regards the frequency of the traumatic etiol-

ogy of pulmonary tuberculosis the most critical students hold that true cases are rare. Sokolowsky even declares that a "true case never occurred and that no case really admits of the conclusion that the trauma paved the way for the development of latent tuberculous process. * * * In a general way the etiological significance of the trauma has become less assured than in previous years, but the practical problem of allotting to the trauma its true value as a direct cause in problems of accidents and their effects remains very important."

Frolich recommends "a thorough study of every feature of every case and especially an investigation of the question whether the accident is likely to have influenced the course of a possibly previously existing latent or manifest tuberculous pulmonary lesion."

Oddo and Chavernac in a very exhaustive treatise in which they discuss this subject from the scientific standpoint, and also the practice of the French courts, lay down the following conditions as necessary in order that the revealed tuberculosis may give a claim to indemnity as due to the accident.

1. Before the accident the patient should have all the attributes of health, and work regularly and wholly.

2. The developed tuberculosis must be *at the point of injury or in its immediate neighborhood*. A pulmonary tuberculosis developed on account of general feebleness of the injured person, or other such cause cannot be considered as a true result of the accident.

3. The first tuberculous manifestations should be immediately or within a few weeks after the accident.

They admit, by implication at least, that an existing tuberculosis may be aggravated by a traumatism. In this connection they say, "the conclusions upon which compensation to the injured ought to be based must depend on a minute classified diagnosis and prognosis in every case. His previous state of health, his ability to do work, absences from work owing to ill health, the condition after recovery from the accident and all other evidences must all be considered with a view to establishing in a measure as exact as possible the reduction of capacity clearly attributable to the accident." In discussing the acceleration of

the tuberculous lesion due to traumatism they say: "This condition is particularly delicate for legal determination. The French court of Cassation (July 27, 1905), decided that the benefit of the law could not be declared when the death was not the true and immediate result of accident; and especially when the death resulting from a pulmonary tuberculosis could not be considered as a consequence of the accident even when by diminishing the strength of the injured person by keeping him in bed it has determined a more rapid evolution of the malady and hastened his death."

They further say that where a tuberculosis exists at the site of the injured area which follows the injury, "that under these conditions an injury must be considered as playing a creative part and responsible for all consequences because whatever results follow are clearly due to the intervention of the injury and might reasonably be expected not to have been likely to happen but for the fact of such intervention."

The Congress of Surgery of Paris, 1907, after having fully discussed traumatic tuberculosis adopted the following resolution:

"A traumatism without a wound cannot create a local tuberculosis. It is limited to the revealing or aggravating of a pre-existent bacillary lesion in the damaged region; or to localizing at the point struck a tuberculosis (evolving or slumbering) at a distance. Very rarely if the patient is contaminated after the accident, the infection may localize itself on a traumatic focus which has simply created a pre-disposed area." While this resolution does not refer to pulmonary tuberculosis, the same general principles would reasonably apply to the subject under discussion. Generally the French courts have, in cases where a latent tuberculosis was supposed to have been developed by reason of a traumatism, reduced the amount of compensation. But views varied according as the victim was shown to have been able before the accident to perform a normal day's work despite the fact of a latent malady.

Merle's thesis on this subject (Paris, 1911), lays down the following rules for medical experts:

1. He must indicate the relation of cause to effect which exists between the accident and subsequent disease. He ought to show if the traumatism was the determining cause, or the occasional, aggravating or revealing cause.

2. He must appreciate the working capacity of the man at the time of his examination and indicate the modification in this capacity which may ensue.

To do these he must establish:

- (a) The exact etiology of the disease.

- (b) Its prognosis, immediate, and future.

He should reply to the following questions:

1. Was there an accident?

2. Is there pulmonary tuberculosis?

3. Is it possible to establish a relation of cause to effect between the accident and the consecutive evolution of the tuberculosis, and in what degree?

4. What is the incapacity for work of the patient due to the accident?

As regards question 2: Simulation of pulmonary tuberculosis and exaggeration of functional symptoms must be looked for.

As regards question 3: The following inquiries should be made:

- (a) Previous condition. (b) Thoracic lesions likely to provoke pulmonary lesions. (c) The symptoms manifested immediately after accident favoring development of pulmonary tuberculosis. (d) If the development of symptoms is in line with the hypothesis of pulmonary tuberculosis of traumatic origin.

To establish the existence of a certain traumatic pulmonary tuberculosis, it must be shown:

1. That the subject was free from any manifestation of pulmonary tuberculosis before the accident and had a normal working capacity.

2. That he suffered a thoracic traumatism of importance followed by symptoms of pulmonary contusion (hemoptysis, etc.).

3. That the symptoms of tuberculosis are shown within a reasonable time after the accident.

"When all these conditions are not fulfilled, certain traumatic tuberculosis cannot be demonstrated, but it is still possible that the traumatism may be an aggravating circumstance."

The fulfillment of the conditions required by Merle, while they seem reasonable, will, as a rule, be found impracticable for the reason that it will be impossible to secure the necessary data.

The literature on this subject is replete with instances where damages have been assessed, especially in the French courts, which show very clearly that sympathy and not scientific data governed the opinions of medical men and the courts. In several instances damages have been assessed

against corporations and insurance companies where the trauma was either so slight as only to incapacitate the patient for a very short period, or if the injury was of a more severe character an apparent recovery took place and the pulmonary tuberculosis developed months, or even several years afterwards.

In the present state of our knowledge we must admit that it is difficult to definitely trace in any given case a causative relation between trauma and pulmonary tuberculosis. It is easily conceivable that an injury to the chest walls such as a crushing blow or a violent contusion would be sufficient to awaken a latent, or increase an active condition. It is just as inconceivable that many of the trifling injuries which have been ascribed as contributing causes should have such an effect, and especially when in remote parts of the body. It may be definitely stated that trauma is never the primary cause of tuberculosis, therefore at most can only be a contributing cause. The contributing causes are so numerous and complex that it is impossible in the present state of our knowledge to definitely separate them so as to determine how much or how little each contributes to the development of active symptoms.

In any given case where any particular cause is suspected, we must inquire into the family history, living, working environment and habits, as these are the most common contributing causes. After a careful survey of the common causes and these are determined, then we are in a better position to determine how much to attribute to the traumatism. In any and every case, however, we must admit that any conclusions at which we may arrive are at best a mere scientific guess which admits of a large percentage of error. Such knowledge as we may thus obtain has some clinical value, but is not definite enough for medico-legal purposes. I believe, however, that we are warranted in concluding that any trauma of the chest of sufficient violence to cause a marked contusion or penetrating wound of the lung may be fairly assumed as a contributing cause of the development of an already existing infection which may be either latent or active, but even this deduction is not proven.

On the basis of our present knowledge we must conclude:

1. That trauma is never a primary cause of pulmonary tuberculosis.

2. That if we assume it to be a contributing cause in any given case we must exclude the factors which commonly contribute to its development.

3. That for medico-legal purposes the complexities of the situation are so great as to make it almost, if not quite impossible, to determine how far trauma is even a contributing factor in the development of pulmonary tuberculosis.

DISCUSSION.

Dr. H. C. Mitchell, Carbondale: As the doctor has well said in this paper: There is so little literature on this subject and so few cases coming to our notice in the everyday experience that it makes it embarrassing to attempt a discussion of it; hence my two colleagues are absent.

For the past 28 years I have been connected with one of the railroad systems and had occasion to treat a great many wounds and confess I have never yet seen a case of tuberculosis that I thought could be traced primarily to a trauma. I know it is possible for the lung, or any cavity of the body in fact, to harbor tubercular bacilli under perfectly healthy conditions and for the germs to remain latent in the system, and I can readily see that a trauma might lower the resisting powers of the system and, in that way, unmask a latent tuberculosis. I was interested in the digest of the cases treated in the Leipsic University Clinic. You noticed there only seven cases assumed any importance in the 6,000 cases.

After reviewing all the literature at my command, which was not very voluminous, I find all the authors were doubtful as to whether or not a trauma was ever responsible, primarily for tuberculosis, and I think that this subject should be thoroughly clarified by the medical profession; otherwise, in a few years it will be a great bugbear to the medical profession as was Ericson's railway spine and quite as dangerous to the great railway systems of this country who employ men. It is not an unusual thing today for railway employees who have tuberculosis to allege that their tubercular condition was caused by trauma, even when the wound was so trivial that nothing was thought of it at the time and that the surgeon was not even called. In the present state of our knowledge of this subject, when we know there are so many things that will probably cause latent tuberculosis, any conclusions at which we might arrive would, at best, be a mere scientific guess fraught with error, and under no conditions do I think such knowledge would be definite enough for medico-legal purposes.

Dr. Pettit (closing): I have nothing further to add. This paper is a digest of the literature and intended to place the medical profession on their guard when called to court to testify on either side of this subject and also to place at their command the literature I have, in case they need it.

THE CIVIL LIABILITY OF THE PHYSICIAN FOR MALPRACTICE.*

JOHN H. MILLER, M. D.

PANA, ILLINOIS.

With patients sometimes ungrateful, occasionally avaricious, ever exacting and frequently more than willing to exact from the physician or surgeon recompense for a possible or fancied lapse of duty or lack of skill, is it any wonder that members of our profession approach their work with more or less trepidation.

Occasionally, in fact, too often, a misguided brother practitioner through jealousy, malice aforethought, or from an utter disrespect for the ethics of the profession, may by a look, a shrug of the shoulders, or by outright advice, put the surgeon on the defensive.

Were I asked to write a prescription to produce a malpractice suit, I would have it made up of the following component parts:

R

An ungrateful and (usually) impecunious

patientOne part

An unethical, misfit physician.....One part

A contingent fee attorney.....One part

M.

Sig. A sympathetic jury to see that you take your medicine.

The chief sinner is usually the doctor who lends his influence to further this unholy work, thinking thereby he may gain favor for himself and pull down a competitor. Any lawyer will tell you that it is the biggest rascal always who turns state's evidence.

We should keep in mind that little verse which says:

There is so much bad in the best of us,
And so much good in the worst of us,
That it hardly behooves any of us
To talk about the rest of us.

The busy practitioner has but little time to acquaint himself with the collateral branches of his profession, and it will be my purpose to point out a few of the pitfalls that beset his pathway as well as some of the legal aspects that deal with the profession along the line of my subject, that he may be guided thereby.

First comes the question of his right to refuse service, either from inability or inclination to do so. No doubt each member here today has

at some time been ordered to step and step lively or take the legal consequences. There seems to be a pretty well fixed opinion in the mind of the laity, that it is only necessary to order and you must obey.

The Supreme Court of Indiana quite a long time ago passed on this point in the case of Hurley, administrator vs. Edingfield, 156 Ind. 416, saying:

The act regulating the practice of medicine provides for a board of examiners, standards of qualifications, examinations, licenses to those qualified, and penalties for practicing without a license. The act is a preventative, not a compulsory, measure. In obtaining the state license to practice, the state does not require, and the license does not engage that he will practice at all or on other terms than those he may choose to accept.

On the other hand, "The physician having undertaken the treatment of a patient, the law, by implication immediately creates for him a contract, the breach of which constitutes malpractice. The implied contract between physician and patient may be summed up under three heads as follow:

1. That he possesses a reasonable degree of skill and learning.
2. That he will use reasonable and ordinary care and diligence in the case committed to him.
3. That in all cases where there is room for doubt, he will use his best judgment.

As to the matter of "reasonable degree of skill and learning" the courts have ruled again and again that a physician or surgeon need not necessarily be an expert, but shall have that degree of skill common to like localities in which he practices. A surgeon practicing in a small town is not presumed to have, and it is not necessary or required, that he have that degree of efficiency possessed by the specialist practicing in a large city. But failing to give explicit directions for the care of the patient, either to the patient or nurse, constitutes a liability. The physician or surgeon, however, is not required by the law to take the part of nurse.

The physician or surgeon must exercise judgment as to when he may safely discontinue his visits. Having once assumed charge of a case he is the sole judge as to the amount of attention necessary. The law presumes that he shall not discontinue his attention unless it can be shown that the patient can be safely dismissed, or by the consent of the patient or by giving sufficient

*Read at the sixty-fifth annual meeting of the Illinois State Medical Society at Springfield, May 19, 1915.

notice that the patient may secure the services of another. In a case that came under my notice some time since, a surgeon reduced a dislocation, used the usual precautions to prevent a recurrence and instructed the patient to call at his office within the next few days for observation. The patient failed to do so, although it was proven at the trial that the patient had been able and did make visits for a distance much farther than the surgeon's office only a short time after the accident.

The surgeon saw the case something more than five weeks after the injury and discovered that there had been a re-dislocation and was held liable by a jury for malpractice in a considerable sum. Taking it for granted that the surgeon was liable, there seems to be an element of injustice in the size of the verdict inasmuch as it has been held that where the negligence of the patient enhances the injury, the right to recovery is lessened and damages, if any, should be mitigated to the extent that the injury has been aggravated by the acts of the patient in the matter of contributory negligence.

In order to be on the safe side, the physician should insist on seeing the patient as often as he may deem necessary and as to this he shall be the sole judge. If it becomes necessary to bring action for his services it will not be necessary for him to prove that the visits were actually necessary, so long as the patient is in his charge. If the patient be a pauper and the physician be employed by the county or city, his liability is the same as though the patient were himself paying for the services.

A departure from the recognized methods of treatment renders the physician liable, despite any good intentions he may have. To recover however, the patient must establish the fact that there was a radical departure from established methods and that the treatment was unwarranted and caused deleterious effects.

If it is necessary to use an anesthetic to aid in determining the extent and character of an injury as well as to assist in the application of proper treatment, and the same is refused by the patient, the physician can not be held liable if damage results by such refusal.

A physician is not liable for a lack of beneficial results in a case, provided there has been

no express agreement or guaranty, unless it can be shown that want of success was due to his negligence.

A physician is liable if he take a non-professional friend with him to a case of confinement, especially if he leads his patient to believe his friend is a student or physician. The same rule applies in any case where the patient would be shamed and mortified by the presence of a party not entitled to invade the privacy of the home.

Unless the law makes it the duty of the physician, he is not justified in making a post mortem without the consent of the party having authority to give the same. The rights are vested as follows: First, the husband or wife of deceased. Second, if no husband or wife survives, then the children. If there are no children then the brothers and sisters. If none of these survive, then the next of kin according to the law of descent of property.

A physician is protected from liability if he perform an autopsy under the direction of the coroner in cases where a physician's certificate cannot be given. He may, however, be subjected to troublesome litigation and in assuming such risk, he should have the party ordering such post mortem, indemnify him.

The matter of privileged communications has been the cause of much difference of opinion in different states. In some states, the physician is not permitted to disclose information given him while acting in a professional capacity, while in others, professional knowledge gained in the line of duty is not held sacred by the courts.

The Supreme Court of the United States has lately held that under the status of Arizona:

"The testimony of the physicians shall be excluded with respect to two subjects: (a) Any communication made by the patient with reference to any physical or supposed physical disease, and (b) Any knowledge obtained by personal examination of such patient. And this privilege is waived according to the terms of the proviso, only in the event that the patient offers himself as a witness and voluntarily testifies with reference to such communications."

In our own state the court may require and the physician will not be liable for disclosing information coming to him in a professional way.

Information coming to the physician in the performance of an autopsy does not come within the protection of the statutes, neither does infor-

mation or communications had for the doing of an unlawful act.

That the pathway of the physician is beset with pitfalls goes without saying. If a patron refuses to remunerate us for services rendered, we must use the strictest caution in making mention of the matter to our fellows for their pecuniary protection, else we may find ourselves the victim of a suit for libel. The Supreme Court of Pennsylvania has lately been called on to decide a suit that was brought against a physician who reported one of his patrons to a physicians club as "slow pay."

An operation for the relief of a condition, may be entirely satisfactory from a functional standpoint, yet a surgeon may be put on the defensive because the cosmetic effects were not ideal.

In certain cases physicians are liable for malpractice, not their own. If a physician leave his patrons in the hands of another, and the other physician is practicing independently of the first, the first named physician cannot be held liable for the acts of the other, but if the relation of agency can be shown, then he will be liable, or if the last named be acting as assistant or partner, then both are liable.

Several malpractice suits have come under my observation and in each case, without exception, either the prospective contingent fee of the attorney or the jealousy of a brother physician, or both have been the exciting cause. In some instances I have noted an enormous fee, much out of keeping with the services rendered, filed by the physician who helped to instigate the suit, that he might share in the blood money also, should the unfortunate victim be mulct for a liberal sum.

Not so long ago I was a witness in a suit wherein A. was sued for heavy damages. It appeared that he had taken charge of a case of first confinement. The presentation was occipital posterior and the labor consequently slow. Owing to the tardiness of the case at the request of the patient, Dr. B. was called and delivered the child with instruments. After three or four days the mother thinking she was progressing too slowly, dismissed Dr. A. and called in Dr. C., who straightway proceeded to curette this recently delivered patient, a procedure unwarranted and dangerous at that time. A vesico-vaginal fistula

resulted which condition was placed to the blame of Dr. A. by Dr. C. and a suit for heavy damages filed with Dr. C. playing the rôle of main prosecuting witness.

A sympathetic jury found for the plaintiff, but the Appellate Court remanded the case, saying that Dr. A. could not be held for the acts of others and there it remains.

I would not want you to understand me as condemning the legal fraternity in general as it numbers among its ranks, many ethical gentlemen who have high ideals of professional dignity. The ambulance chasing, contingent fee, near relative to the hold-up man, is the one we should seek to repress. Were it not for an occasional traitor in our own ranks, his suppression would be easily accomplished.

There is another menace that has lately developed, and while it is a good thing, yet it can be and is being used unethically. I have reference to the x-ray. These machines cost money and must be paid for. I have the highest regard for the professional gentleman who honestly tries to benefit mankind by the proper and ethical use of this machine, but on the other hand I think we should discourage the use of these when we find the possessor playing to the galleries, raying injuries to furnish evidence in malpractice suits, etc.

Not so very long ago a patient of mine was taken to another physician and rayed for an impacted fracture of the neck of femur. As far as I know, no questions were asked, certainly none were asked me, and the plate was shown to a commission, but the physician was unable to explain it satisfactorily and his evidence fell far behind his intentions.

There is an x-ray in an institution with which I am connected, but no physician can have a negative made of any case except his own or by his consent.

No patient is allowed to have a photo of his injury except on the order of his physician. In this way we hope to serve both the physician and his patient and keep clear of malpractice suits, at least if any are instigated, we will not be "particeps criminis."

We can be honest with our patrons and should at all times give them the best possible service and the use of the most approved methods.

By massing our strength and encouraging the professional courtesy that should exist between members of our profession, we can discourage the tendency to rob members of hard earned fees and of reputation as well. If we see a brother becoming jealous, who is slipping, and this is what puts them in a mood to do something ugly, encourage him to adopt higher ideals and be a good fellow.

It is a sad commentary on the ethics of our profession that it is necessary for about all of us to carry some sort of an indemnity for protection, but it is a fact. It is a case of getting vaccinated or have the smallpox.

DISCUSSION

Dr. G. J. Mautz, Springfield: I am sure this paper has been one of the most practical lectures we can have. I have heard it said by the laity, "You can't get one doctor to testify against another." I think that true as far as a lawsuit goes. Many a case has been started through a misunderstanding. Now, about the insurance in general. I do not suppose we carry any insurance that is more valuable to us than the malpractice insurance. I think most doctors would drop almost any other of their insurance rather than their malpractice insurance.

The Chairman: I think we would like to hear from Dr. King.

Dr. C. B. King, Chicago: There are one or two points that I would like to speak further about, and one of them is the reason for our increase in malpractice cases, not only in this state, but in practically all of the states. The eastern states are having less trouble than we are in the middle and western states. I have no positive knowledge further than supposition. My supposition from studying the reports of 23 of the different state societies from whom the committee appointed to make investigation of medical defense shows that in the states that have a compensation act the suits for malpractice are increasing by bounds. In the states where no compensation act is in force we have fewer cases. For instance in Pennsylvania, with the great cities of Philadelphia, Pittsburg, Harrisburg and Scranton, where there are thousands of employes, it costs the doctor 50 cents per capita to take care of medical defense. In the state of Washington, a very much smaller state, with a compensation act that has completely put lawyers out of the running, it costs the doctor \$10.00 per year per capita to carry the defense, and the casualty companies have quit the state entirely or practically so. In the state of Washington the compensation act really means state insurance. They have in that state a commission: One appointed by the labor interests; one appointed by the employing interests and one by the governor of the state. These three men make up a state committee to settle every case. The

employers of labor pay to the secretary of state a percentage depending upon their pay-roll. Whenever an accident happens or an employe is injured in any way the report is immediately made to the secretary of state, and this commission of three men settle the matter after the reports of the various physicians come in. No lawyer has a chance to get in, but the poor doctor—God pity him in that state!

We have two or three suits on hand from burns caused by hot water bottles that had been applied by nurses. The doctor is being held liable. We have not lost such a case, and I do not expect we will, but it causes lots of trouble. Just look after those things a little bit, because trouble is brewing from several quarters. Another thing: I think it good advice to X-ray every one of your cases and keep your plates. We are having trouble in one county because of that. Then there is another angle I do not believe has been touched on, and that is casualty insurance. We have a case now, and it is going to establish a very bad precedent unless we win. In that particular case an employe was injured; his hand was crushed and there was subsequent infection. The doctor who saw him for the first two days put the case in another doctor's hands. The infection went up the wrist and arm; the insurance company that carried the risk was not satisfied and said that their physician should take charge of it.

This physician intimated that they would not have had such trouble if the case had been taken care of properly in the beginning. The indemnity company induced the patient to bring a malpractice suit against the doctor. If they win that case it means this precedent: That the injury was not due to the accident, but it was due to the fact that the doctor did not take care of it properly. What position does that put us in. Suppose you care for a fracture. The result is not good. That patient happens to have accident insurance. The insurance company will say, "It ought to heal in eight weeks; it is the doctor's fault; get him to settle it for you."

Now the remedy: Ethics are not thought of much at present, but the thing in my mind is the social aspect of our various local societies. Get them together; get a good feeling between every one of them and you will have far less malpractice suits.

A Voice: If we are bound to have the Workmen's Compensation Act in this state and it is going to make trouble, we ought to know it.

Dr. King: We have the Workmen's Compensation Act in this state and notice that it has increased the number of malpractice cases. Your committee has 70 cases. We have disposed of 25, and there are a number of cases that the insurance companies are handling. The reason I think that the Compensation Act is bringing about this condition is that there are laywers and lawyers—just as there are doctors and doctors. We know there are many doctors that are barely making a living. They are glad to grab things wherever they can. Now, there is a certain class of contingent fee lawyers, and they have had taken

away from them a very fertile field. These large corporations, as well as casualty companies, prefer to settle if they can get out \$10 cheaper than by defending the case. So the Workmen's Compensation Act has taken away that from the lawyers, a large and fertile field, and they look for some other field, and they are following up the doctor for that very reason. At least that seems to be the explanation.

The Chairman: In our office in Peoria we do not allow the X-ray plates to be taken from the office, the point being that the X-ray is simply a means for diagnosis, and we do not allow it to be taken from the office any more than the blood examination. We have had some trouble with patients who thought they were entitled to the plate, but when it was explained to them we did not have much more trouble.

A Voice: Has that been passed on in law; it is a question that is coming up all the time, the ownership of the plates.

The Chairman: We take the position that it is our means of diagnosing a case and do not let it go out of the office.

Dr. Percy, Galesburg: This subject is so interesting that I wish to give an experience of my own in preventing malpractice suits as far as my own work is concerned. We all know that the majority of cases are unjust. I might say I have never had a malpractice suit, although I have had some six threats. My own plan of settling them is, as soon as I hear of any complaint with reference to anything in connection with an operation, to institute a suit for my bill, and I always institute that suit in the Circuit Court. If the bill is for \$50.00—that is not an amount sufficient to get you into the Circuit Court—so I always make it \$200.00. There is always a great protest on the part of the people, but they have to settle the question on my charge in the Circuit Court, and in our county our judges will not allow the question of malpractice to be brought in with the question of compensation, and so it leaves it to the jury to merely thrash out the question whether or not the money was earned, and so far I have won every suit. I have asked my lawyers a number of times whether or not the question of malpractice could be brought up again, and they simply laugh and say "yes," but when a suit has been won for compensation usually the lawyer that has instituted the case has not the courage to go further. I think this is something worth noting.

Dr. King: Dr. Miller recommends that we should carry insurance; that is true, but my experience with the various casualty companies carrying doctor's protection is this: They run a business; it is well managed from the casualty company's standpoint, but not from the doctor's standpoint. I can cite you cases, if you care to hear them, where the casualty company, if they can settle the case for \$100.00, will not fight it and win if it costs \$110.00. The result is that one suit settled means two or three more brought, and I think it might be bad insurance. It seems to me we

are going to be forced in a little while to carry our own mutual insurance.

Dr. Miller (closing): There are probably none of us here who are practicing medicine who have not been technically liable, and some of us have been supported by brother physicians—probably not by so much negligence, but bad luck of one kind or another. It behooves us to stand together and if we can blacklist the man who is working up these cases I think it would be a good thing.

I was connected this winter in a matter of malpractice where they got a judgment against the doctor of \$3,000 on one trial. He got a rehearing, and the jury must have found out that he had insurance back of him of \$5,000, and they stuck him for the \$5,000—they got the whole thing. There was another doctor who did not want to be held up, and he filed a petition in bankruptcy; they headed the thing off—the attorney was the principal thing, and probably some jealousy on the part of the physicians. I'm going to say we have no right to push anything against one of our brothers. It was only just a few days ago that I saw a fracture that was set by this physician who pushed the case on the other doctor. I saw a fracture of the humerus with a two-inch lap. I saw the photograph of it, so you see it is but a little while that he fell into the same trap, and I don't think we ought to give very much sympathy in a case of that kind. There is always a good way to head off these cases.

Now, our physicians in our little city meet every month. We all pull together. Not long ago a case came up in which one of our physicians helped another out. A little bad luck resulted. No fault of physician, but the man started out and instituted a damage suit. We heard of it, and it did not materialize. The doctor spoke to me about it, but a few days later one of the lawyers said to the physician: "So-and-so was around to see him about a damage suit"; but the doctors all stick together and a man could not get a damage suit in our city if he worked day and night. I have been threatened about five times with a damage suit, but have been fortunate enough to have nerve; never buy a patient off. As Dr. Percy has said, go and institute a suit for your own bill; I have done that.

THE PAINFUL MANIFESTATIONS OF MYOCARDIAL DISEASE.*

L. C. TAYLOR, M. D.

SPRINGFIELD, ILL.

There are few conditions that demand greater care in examination, and caution in regard to treatment and prognosis than the alterations that occur in the muscular structure of the heart. Before entering upon the presentation of this sub-

*Read at the sixty-fifth annual meeting of the Illinois State Medical Society at Springfield, May 19, 1915.

ject, it might be well to refresh our memories somewhat in regard to the anatomy and physiology of this important organ. When we consider that the heart acts with but short intervals of repose throughout one's natural life, we can appreciate that any factor which increases its burden is worthy of our most serious consideration.

Physiologically, it first helps itself from blood sent into the aorta, being supplied by the coronary arteries which pass down the interventricular grooves to the parts which they respectively supply. To the student of internal medicine the cardiac blood supply presents one of the most interesting subjects for consideration. Piersol in his extensive work on anatomy with such collaborators as Dwight of Harvard, McMurrich of the University of Michigan, Hamann of the Western Reserve and others, uses the following language:

The branches of the coronary arteries upon the surface of the heart are, as a rule, all end arteries,—that is, arteries which form no direct anastomoses with their neighbors. Practically, no blood can be carried, therefore, by the left coronary artery into the territory supplied by the right, or vice versa, and sudden occlusion of either of the arteries will produce serious disturbances, or in some cases, complete arrest of the contractions of the heart.

Following the teachings of Conheim, Hershfelder in his elaborate work on disease of the heart and aorta makes practically the same statement. A complete occlusion of either artery or any of its large branches will immediately and seriously impair the function of that part of the muscle to which it is distributed. He states, however, that the capillaries communicate with those of the opposite side and that where gradual occlusion of the artery occurs, "a compensatory dilatation of the capillaries may arise and thereby assist in the nutrition of the organ." The Thebesian orifices no doubt, play an important rôle in nutrition as a portion of the blood may pass directly through them into the cardiac muscle and from there find its way into the return circulation. Later studies into the cardiac circulation by other observers seem to demonstrate that there is, however, a moderate degree of communication between the coronary arteries of the two sides of the heart. Edwards in an article published in the *Journal A. M. A.*, states that it has been demonstrated that there is a measure of communication between the smaller arteries of the opposite sides of the heart. The fact, however, that there has

been marked difference of opinion between anatomists on this point, would seem to justify the opinion that anastomosis exists only to a limited degree when compared with other organs of the body, with the exception of the brain where the existence of end arteries is accepted as an established fact. Why the blood supply to these two most important organs of the human body should be thus circumscribed, is a phenomenon for which I have seen no satisfactory explanation. To Stanly Kent and William His, Jr., is due the credit of demonstrating a muscular communication between the auricles and ventricles. The nervous supply is furnished by the vagus and sympathetic system, the former being the inhibitory nerve of the heart, the accelerator impulse being furnished from the latter. Stimulation of the pneumogastric will produce bradycardia, although the auricular contractions will continue at the same rate.

The larger proportion of the cases of disease of the myocardium after exclusion of those due to acute infectious diseases, consists of fatty or fibroid degeneration as the result of chronic nephritis, syphilis, gout, arteriosclerosis from whatever cause, and senility. The early recognition of disease of the cardio-vascular system is one of the most important that can confront the general practitioner, for prompt treatment both hygienic and medicinal will not only secure to the patient much relief from distressing symptoms, but establish confidence in the accuracy of observation upon the part of the attending physician.

As to the premonitory symptoms, subjectively, that should call our attention to the cardio-vascular system, the following are the most striking:

First, pain either in the precordial region or the abdomen, gastric disturbances associated with dizziness, dyspnea with sense of discomfort in the chest after eating or upon exercise. The objective symptoms in the early stage may not be very prominent. At a later stage we find rales on deep inspiration, tendency to swelling of extremities, secondary enlargement of the liver and spleen, cyanosis and cardiac arrhythmia. Nothnagle taught that a persistent irregularity in the heart's action was always indicative of degeneration of myocardium.

In submitting a subject for discussion in the

medical section, it was my intention not so much to attempt to describe a disease entity, as to call attention to pain in the precordial region as a symptom demanding most careful consideration, not only for the welfare of the patient, but for the reputation of the attending physician.

In a general practice extending over a period of many years, the element of pain in this region has appeared to me the most difficult of interpretation.

In discussing pain in the precordial region, one must naturally include not only morbid process in the myocardium, but also those of the greater blood vessels, intercostal nerves, mediastinal tumors and transitory pains so frequently met with in young women of nervous temperament. The interpretation of pain in this region is not only of importance from diagnostic and therapeutic standpoints, but especially so from the standpoint of prognosis. From the mistakes of others, including some embarrassing ones of my own, I have learned to approach distressing symptoms in this region with a marked degree of deference. An experience related by a great clinical teacher, whose reputation is international upon the subject under discussion and under whose private instruction I had the pleasure of studying physical diagnosis, has frequently rendered me valuable service.

This professor was once called to see a patient suffering pain in the region of the heart which did not present all the classical symptoms of what is commonly called angina pectoris, for want of a better name. He felt justified in assuring the family that cases of that character were not followed by fatal results. He left the house and had barely reached the front gate when he was hastily recalled and found his patient dead. It is needless to say that I have never made the diagnosis of pseudo-angina since that time. I am not sure that "pseudo" should ever qualify a diagnostic term. While the patient survives, there does not appear to me sufficient differential points upon which to determine whether or not we are dealing with vascular-spasm, or with pathological lesions in the myocardium or blood vessels or both. Age, temperament and sex, however, may render valuable aid. It is embarrassing to depend upon the autopsy for a confirmation of our diagnosis. As stated

above, the cases are not always classical. It is the reversal of the development of symptoms that is so easily misleading.

Dr. Cabot relates a case which had been under treatment for months for rheumatism in which the patient complained of pain in the brachial region in both arms. It proved to be a case of aneurism of the ascending aorta.

I can recall two or three cases in my personal experience in which the pain began in the gastric region after a meal and accompanied with vomiting. The patients usually made their own diagnosis of acute indigestion. One case of this kind occurring in an elderly man, was so completely relieved after the stomach was emptied that my warning as to exercise was ignored and I was called again on the second day after rather active exercise upon the part of the patient when I found him suffering intensely with pains extending out both arms, also involving his throat, together with intense spasmodic asthma. He died on the third day upon the return of a similar attack. Paroxysmal sub-sternal pain may be caused by other conditions than diseases of the myocardium, although this may be present secondarily. Notably as a causative factor, aneurism of the aorta should take first place. I have at this time, two cases under treatment where the first symptoms were what the patient described as a grasping pain in the sub-sternal region.

The first was in a man aged thirty-eight years, a coal miner by occupation, where the first symptom considered important enough to prompt consulting a physician, was neuralgic pain in the precordial region. This was promptly relieved by a hypodermic injection by the attending physician. A careful examination at my office a few days later revealed a broadened area of dullness over the upper portion of the sternum and a slight pulsation at the right border. This patient has had several attacks of severe pain radiating to both arms which are less severe in the sitting posture with the body bent forward, an attitude so characteristic of aortic insufficiency. A diastolic sound over the base of the heart was not discernable in the early stages, but is now clearly noticeable as the disease progresses. The character of the pain in this case served me well in the diagnosis of another case occurring in a man aged thirty-five years, who is also at pres-

ent under my observation. This patient consulted me a short time ago for a so-called bronchitis for which he had been under treatment for three or four months. He did not expectorate and the cough was most troublesome at night. Notable, however, was the statement that he suffered from what he described as a grasping pain in the precordial region which was relieved by assuming a sitting posture. A slightly widened area of dullness and an extremely faint pulsation to the right of the sternum, suggested the probability of an aneurism. The diagnosis in both of these cases was confirmed by fluoroscopic examination and x-ray pictures. Both of these patients denied luetic infection, but a Wassermann has not yet been made. The paroxysms, however, in the first case, have practically disappeared under the administration of iodide of potassium. The latter case has been under treatment too short a time to permit of any conclusion as to the result. A roughened, somewhat prolonged second sound, accentuated by leaning forward, is discernable over the region of the aortic valves. Beginning involvement of the coronary arteries may explain the nocturnal pains present in this case.

Mr. ———, a hotel proprietor, called me to examine his case. I found severe dyspnea caused by pulmonary edema, together with general anasarca, enlarged and dilated heart with a pulse rate of thirty per minute. He stated that he had on former occasions slow heart-beat which would continue for two or three weeks. There was a systolic murmur at the apex with weak heart sounds. Severe attacks of cardiac asthma, accompanied by pain, would occur frequently at night. Under laxatives and the administration of cardiac stimulants, the bradycardia and other symptoms disappeared and he made a good recovery with cessation of symptoms for a year. At the end of that time he called at my office one afternoon complaining of precordial pain and dyspnea with return of the bradycardia. He died suddenly the next morning in an attack of angina before I was able to reach his bedside after being summoned.

The mitral insufficiency in this case was no doubt the cause of the pulmonary edema and swelling of the extremities, but I refer to it as one of the few cases of heart block which have

occurred under my personal observation. So far as I can now recall, there were no attacks of syncope which occur in what is known as Stokes-Adams syndrome.

There has been much discussion as to the cause of angina pectoris, but call it by whatever name we may, cardiac neuralgia, ischaemia from vasomotor spasm, the fact remains that changes in the blood vessels of the heart are present in a vast majority of these cases. Huchard found coronary sclerosis in one hundred and twenty-eight out of one hundred and forty-five autopsies recorded in literature and most of the others were in cases of adherent pericardium or valvular diseases. These changes in the coronary arteries are usually accompanied by degeneration processes either fatty or fibroid in the myocardium.

First of all, angina pectoris can hardly be considered a disease entity, but simply one of the forms of degenerative processes of the cardiovascular system. There is nothing pathologically to be found post mortem that may not be discovered in death from myocardiac diseases running clinically a far different course.

Pain caused by morbid processes in the mediastinal region may begin in parts remote from the actual pathological conditions. They may be crural, abdominal, brachial or begin in the front part of the neck or even in the back.

Pains in this region which should cause the least apprehension, are those arising in younger women of nervous temperament.

Pains arising from mediastinal tumors or aneurisms may resemble closely those caused by disease of the coronary arteries or the myocardium.

DISCUSSION.

Dr. E. J. Brown, Decatur: We know now that the use of those refined instruments—the polygraph and the electro-cardiograph—is not practical for the general practitioner; they are wonderful instruments for laboratory investigations and for finding the work of the heart in various heart lesions, but, we also know that many of the so-called cases of myocarditis are really cases of that common form of heart arrhythmia known as auricular fibrillation, which comprises at least half the irregular hearts met in practice. This condition is easy to detect simply by noting the cardiac pulsation with the stethoscope while the finger is on the pulse; many cardiac pulsations fail to reach the wrist, thus giving a “pulse deficit” of ten, twenty or more beats. It is in just these cases that the wonderful effect of digitalis and strophanthin is seen.

Regarding painful heart conditions, we know that

any chest pain which is made worse by exertion and which extends down one arm is usually an organic angina and may be due to any one of several heart conditions and usually gives a bad prognosis.

AN UNUSUAL AND INTERESTING CASE OF CARCINOMA OF THE OMENTUM.

CHAS. J. WHALEN, M. A., M. D., L. L. B.,
CHICAGO, ILL.

Of interest for the following reasons:

First, the long time elapsing between onset and termination of the disease, which was upwards of five years.

Second, numerous mistakes in diagnoses by several of our most noted surgeons and an equal number of well-known internists.

Third, complete absence of symptoms, there being no apparent interference with the functions of any of the organs of the body notwithstanding the fact that a tumor measuring 14 x 21 x 24 inches and weighing approximately 100 pounds and occupying the entire pelvis and abdomen and extending into the thorax as high as the second intercostal space; that the stomach, spleen, intestines and bladder occupied a space in the center of the tumor not larger than two fists, that the lungs, heart, liver, pancreas, kidneys, while not incapsulated within this immense tumor were nevertheless severely pressed upon by it, still there was no apparent shortness of breath, the appetite was enormous, no constipation, no pain and no gastro-intestinal symptoms.

Fourth, that the man was able to continue his usual occupation without interruption up to within nine days of his death notwithstanding he had emaciated so that practically all the muscle tissue had been absorbed; on post mortem only here and there was it possible to recognize muscle fibers. The patient was 5 feet 4 inches tall, the estimated weight of the skeleton after removing the tumor was 30 pounds (the weight of the tumor being 100 pounds) nevertheless the patient's mind remained clear up to the moment of death. Only a few hours before dissolution he dictated a letter to his stenographer, and signified his desire that a post mortem be done on his remains.

History.—Three and a half years before his death the patient consulted me because of a fullness of the abdomen first noticed one year previously. Upon closer questioning, patient

admitted that for over two years and perhaps for three years previously there existed a hard feeling in the abdomen. Physical examination revealed a large turtleback-shaped tumor almost completely filling the pelvis and abdomen and extending up under the ensiform cartilage; no pain or tenderness anywhere elicited.

A diagnosis of carcinoma of omentum was made, the patient was referred to a world-famed surgeon for confirmatory diagnosis and operation. This surgeon changed the diagnosis to sarcoma, advised against operation and made a prognosis that patient would live in all likelihood not longer than three months, and under no circumstances not to exceed six months.

Consulted second renowned surgeon who made similar diagnosis and prognosis. Patient was referred to a well-known internist, who made similar diagnosis, his prognosis being that the patient could not survive longer than ten weeks.

The patient, upon learning the nature of the disease and the necessarily unfavorable outcome, suffered a severe physical shock and was much depressed mentally. He wound up his financial affairs and went home to die. After four months at home the patient had recovered from the shock and mental depression, and his physical condition being no worse than four months previously, he concluded to again open up his business. This he did and continued to attend to same uninterruptedly until nine days before his death, which occurred two years and four months after his first visit to me. At the time of his first visit the tumor was three-fourths the size it was found to be at post mortem.

Post Mortem Anatomical Diagnosis.—Primary pseudomucinous carcinoma of pancreas. Peritoneal (so-called) "colloid" carcinomatosis. Secondary carcinoma of the omentum. Hypostatic pneumonia of lower left lobe. Edema of right and left lower lobes. Bilateral marginal emphysema. Brown atrophy of heart. Serous atrophy of sub-epicardial adipose tissue. Healed calcified tubercles of both apices and of one peribronchial lymph gland. Pressure atrophy of liver and pancreas. Biliary retention cyst of the liver. Chronic interstitial splenitis. Pigmentation of the peritoneal covering of the small intestine. Slight atheroma of the arch of the aorta and coronary vessels. Corpora amylacea of the prostate.

The body is that of a man 5 feet, 4 inches tall. The face, limbs and thorax are much emaciated. The ribs are very plainly evident and the abdomen is greatly distended. The swelling of the abdomen is nodular on palpation with areas of softening in the centers of some of the nodules. Midway between the ensiform cartilage and the umbilicus is a small ulcer due to x-ray treatment. The lower extremities are swollen and edematous and show pitting upon pressure. The prepuce and scrotum are slightly edematous. The rigor mortis is not well marked and posterior lividity is very slight. The veins on the sides of the chest and abdomen are enlarged. Decubitus is present over the sacrum.

Upon opening the abdomen the parietal peritoneum is found adherent to the tumor mass. This tumor is an enormous gelatinous growth, nodular and involving the parietal peritoneum and is adherent to the diaphragm and the transversalis muscles. In order to enucleate the tumor the muscles of the abdomen must be cut across. A very small amount of bloody fluid is present in the dependent part of the abdomen. The entire pelvis and abdomen seem occupied by nothing but this tumor mass and none of the abdominal organs can be seen. On the left side the tumor mass extends up to the second intercostal space in the mammary line, and on the right side it extends as far as the third rib in the mammary line.

The costal cartilages are not ossified; the ensiform cartilage is bent outward at a right angle. The diaphragm was cut from its attachments and then, by shelling the tumor from the abdominal integument, the entire mass together with the abdominal and pelvic organs, can be removed intact. The dimensions of the tumor mass are 14 x 21 x 24 inches. The estimated weight of the mass with the adherent viscera is 100 lbs.

The thyroid gland is normal and weighs 20 grams.

The larynx, trachea and large bronchi are covered with a tenacious mucus. One peribronchial gland consists of a calcareous mass 2 x 1 cm.

The external surface of the left lung is smooth everywhere except at the apex where there is a small calcareous nodule 3 mm. in diameter. The upper lobe is crepitant; the lower lobe posteriorly

is heavy and crepitates feebly. The outer surface of this portion is dark in color, and a large amount of bloody fluid exudes from it. A piece cut from this portion sinks in water while the remainder of the left lung floats.

The external surface of the right lung is also smooth and crepitates everywhere; the cut surface of the upper lobe is rather dry, while that of the lower lobe is quite moist. From the bronchi of the upper lobe a muco-purulent material exudes. On the posterior surface a small calcareous nodule is found. The right lung weighs 350 grams.

The epicardium of the heart is smooth; the coronary vessels prominent and tortuous. The right margin of the heart is slightly edematous.

The aortic and pulmonary valves are competent to the water test. The right and left ventricles are devoid of blood and in partial systole. The endocardium is smooth. The foramen ovale is closed. The beginning of the aorta and the coronary vessels show a few small atheromatous patches. The cut surface of the heart muscle is brownish and pale. The heart is small; its weight empty is only 150 grammes.

The peritoneal surface of the diaphragm is infiltrated with tumor tissue.

The spleen is entirely inclosed by the tumor substance; the organ is very small, and at the hilum the tumor seems to invade the capsule of the spleen, which is thick and wrinkled. There is a large scar on the costal surface of the capsule. The splenic tissue is firm; on section the Malpighian bodies are indistinct and the connective tissue is increased.

The tongue is normal; the tonsils, pharynx and upper portion of the esophagus are also normal. The lower end of the esophagus is covered with pale elevations of epithelium of various sizes, which peel off readily, leaving a smooth surface.

The stomach is entirely surrounded by the rather hard gelatinous tumor tissue, which is adherent to the wall, but at no point invades it. The stomach is very much elongated and shows no bulging at the fundus. The walls are rather thin; the mucosa is normal and the pylorus is patent.

Upon entering the tumor mass from behind, the small intestine occupies the center of the mass and is intimately surrounded by a slimy

gelatinous material. Often there are lumps of harder gelatinous substance suspended in this softened material and some of these are attached to the bowel. It is entirely impossible to work out the relations of the intestine; and only with difficulty can the bowel be freed and removed, the lumen of the bowel often being opened in extricating them. The peritoneum covering the colon is smooth. The serous covering of the small intestine is very rough, bluish-gray in color, mottled, but often showing circumscribed solid bluish gray patches which are flattened. The wall of the small intestine is thickened and some of the gelatinous masses are closely adherent to it. In the region of the ileum these nodules are more intimately connected with the bowel wall and some are under the visceral peritoneum. The mucosa is normal. The same kind of discoloration is seen in the mesentery of the small intestine. The mesenteric glands are, however, normal in size.

The ascending and descending colon occupied the lateral positions on the posterior surface on the tumor mass and are surrounded everywhere except posteriorly by the mass sort of gelatinous material. The transverse colon was adherent on all sides and lay in a cleft of rather firm tumor mass posterior to the stomach. The sigmoid flexure and the rectum are entirely surrounded by tumor substance which is rather soft. The mucosa of the large intestine is normal except at one point in the ascending colon where a nodule projects into the lumen of the bowel but does not involve the mucosa.

The length of the intestines, large and small, is 20 feet.

The liver is adherent on all sides to the tumor tissue. The left lobe is very thin and atrophied. For 8 cm. of its extent it is only 2 mm. in thickness. Through this thin area the outline of Glisson's capsule can be seen. The right lower lobe is thin and flat. The anterior surface shows many indentations which are occupied by tumor masses. When removed from the tumor the entire liver is deformed and flattened, with thin margins. It is slightly darker than normal and the cut surface shows the lobular markings distinctly. There is no increase in connective tissue. The central part of the right lobe contains a small yellowish granular nodule 4 mm. in diameter. The liver weighs 620 grams.

The gall bladder is adherent to the surrounding tissue. It is filled with dark or black bile. The mucosa is normal.

The pancreas occupies the posterior portion of the tumor mass and is very closely adherent to a hard portion of the mass. The tail of the pancreas can be dissected away from the above-mentioned mass for a distance of 2 inches. Beyond that it is impossible to separate the tumor mass from the pancreas. The middle portion of the pancreatic tissue is practically absent. The cut surface of this portion of the pancreas has a cystic structure with only a slight amount of normal pancreatic tissue present.

The suprarenals are normal.

The right kidney is quite free, and partly surrounded on its anterior surface by tumor tissue. The anterior surface shows a large indentation into which fits a tumor mass. The external surface is normal. The capsule is separated with slight difficulty but leaves a smooth surface. On the cut surface the markings are distinct. The outer surface is of a pale color. Each kidney weighs 125 grams, and the same description applies to both.

The urinary bladder is closely adherent to the tumor mass. Its mucosa is normal. The prostate gland is not enlarged; its cut surface is pale and shows many very small calcified concretions.

The testicles and the seminal vesicles are normal.

The amount of coal pigment in the lungs is large, and it occurs in the alveoli.

The fibers in the myocardium are small and narrow; they are greatly pigmented with brown pigment.

The sinuses of the spleen are filled with blood. The pulp tissue is diminished, and the trabeculae are relatively more numerous.

The esophagus shows no changes except the thickening which occurs in epitheliosis.

The thyroid gland shows a moderate degree of connective tissue hyperplasia, or a relative increase.

In the stomach the surface epithelium in some places is absent. The glandular structure in the mucosa is greatly altered and the mucosa is infiltrated with round cells.

Sections examined of the compressed liver tissue bear very little resemblance to normal liver tissue, being composed largely of vessels and

round cells. Sections of the liver from other localities show very few changes; there is a slight degree of passive hyperemia.

Sections examined of the pancreas show no tumor.

Sections through the tumor show nothing but pseudo-mucinous material. The epithelial cells which manufactured it have entirely disappeared. The walls separating the pseudo-mucinous material are made up of fibrillar connective tissue.

The sections of the kidney examined show the small size of the glomeruli; the tissue bears close resemblance to that of child.

The supra-renal gland possesses a very peculiar cortex, on account of the greatly vacuolated cells in this region.

Bacteriology.—The *Staphylococcus pyogenes aureus* was isolated from the pericardial fluid.

From the tumor, the liver and kidney, the *Bacillus coli* was recovered.

From the pericardial fluid and the tumor the white *Staphylococcus* was obtained; and from the liver a typical colon bacillus, which slowly liquified gelatin.

25 East Washington St.

THE CANCER DEATH RATE INCREASE IN CHICAGO.*

HENRY G. OHLS, PH. B., M. D.
CHICAGO, ILL.

The advance in medical and sanitary knowledge during the past few years has reduced very materially the sickness and deaths due to the common infections. In communities intelligent enough and able financially to enforce the proper measures of control, the zymotic diseases have been reduced to a fraction of their former prevalence.

Credit for the great reduction in typhoid fever by the protection of water supplies can be shared by the bacteriologist and the sanitary engineer as well as by the medical profession. Their efforts have been greatly aided by the publicity given to every new advance in sanitary knowledge by the press of every description. Always the health propaganda faces us at every turn; much of it "bunk" and a considerable part purely self-advertising. But like all advertising it keeps

the facts before the public and the people are more and more becoming impressed by the basic facts of the campaign.

In the past, success in the reduction of mortality has been largely confined to the class of diseases above mentioned. On the other hand the diseases classed, for lack of a better term, as degenerative diseases—arteriosclerosis, heart disease, nephritis—and cancer have shown nearly as great a relative increase as the other class has decreased.

The great problem now before the profession is to control this situation. And it seems that anyone having access to extensive data bearing on the question is in duty bound to make the basic facts available. With this idea in view I submit the following data as to cancer from the records of the Chicago Department of Health.

The population figures on which the rates are based are taken from the U. S. Census enumerations of 1890 and 1910. The percentage of population at each age group was noted in both enumerations and the difference distributed among the intervening years. Thus the percentage of population under twenty years of age in 1890 was 41.407; in 1910 this had declined to 37.03 per cent. At age 40-50 the percentage of 9.745 in 1890 increased to 12.106 in 1910, etc.

Wherever the statistics of cancer and other malignant tumors have been compiled covering a series of years, a remarkable increase in the *crude* death rate has been noted. The menace to humanity became so apparent in 1899 that the New York legislature appropriated funds for a Cancer Research Laboratory at the University of Buffalo and Harvard University appointed a cancer committee in the same year. In 1900 a committee for cancer research was organized in Berlin. International conferences were held in 1906 at Heidelberg, in 1910 at Paris, and in 1913 at Brussels.

In 1913 all American efforts to popularize the available knowledge on the subject of cancer were correlated by the organization of the American Society for the Control of Cancer, which has secured the indorsement of the American Medical Association and other agencies interested in the cancer problem. The association issues scientific monographs and press bulletins to disseminate

*Published in part in the Bulletin of the Chicago Department of Health, May 22, 1915.

widely all information on cancer that becomes available from time to time.

The fact that cancer was for a time supposed to be a germ disease led to strenuous search for the offending organism in the hope that intensive study of the culprit (as in tuberculosis) might disclose its vulnerable points of attack. The steadily lengthening death roll shows how futile has been the investigation to date. While the cause of cancer in general is still veiled in obscurity, some of its predisposing causes, such especially as long continued irritations, are well-known and the avoidance of such irritations and the early treatment of lesions should be insisted on. By this means very many of the lesions will never reach the cancerous stage and the early local cancers can be removed surgically (includ-

We, therefore, submit our detailed statistics by age groups and certain organs affected, covering the period of 1897-1914, in the hope that they will throw additional light on one of the most baffling questions now confronting the medical profession. It will be noted in Table I that there is a fairly even increase in the rate in each age group.

The rates in Table I are shown graphically in the following chart:

Table II, grouping the death rates into six-year averages, shows uniform increases at each age group with the single exception that the second period at age 20-30 shows a decrease.

A special compilation giving the death rates from cancer of the uterus and female breast is shown in Table III. No figures are available for

TABLE I.—CANCER DEATH RATES INCLUDING SARCOMA PER 100,000 POPULATION AT EACH AGE GROUP.

Year	Under 20	20-30	30-40	40-50	50-60	60-80	Over 80	All Ages
1897.....	1.17	5.03	33.38	105.96	244.57	482.61	382.46	51.8
1898.....	2.26	11.90	39.64	137.58	224.87	465.37	553.55	57.3
1899.....	4.05	6.77	34.62	106.96	302.68	537.01	752.46	61.1
1900.....	2.55	5.47	37.71	113.16	253.24	498.21	875.69	57.8
1901.....	1.75	7.83	31.75	105.44	294.29	592.45	762.65	62.7
1902.....	3.29	5.91	37.50	125.34	282.13	555.02	928.99	64.8
1903.....	2.24	6.24	34.86	120.73	267.24	575.75	654.42	63.4
1904.....	1.51	5.38	32.36	129.31	273.33	553.79	546.55	63.3
1905.....	2.69	6.39	36.43	119.41	269.98	650.32	948.69	65.6
1906.....	2.77	6.91	33.12	120.44	334.37	606.40	908.08	71.5
1907.....	4.27	9.59	39.28	134.64	302.59	635.38	976.73	75.4
1908.....	5.08	7.88	40.04	140.22	304.71	614.35	769.23	75.4
1909.....	4.00	11.26	39.93	135.26	319.94	617.85	836.61	77.2
1910.....	2.58	7.75	36.84	138.45	333.28	673.34	961.38	80.1
1911.....	3.26	8.79	41.83	139.57	314.76	625.83	863.63	78.7
1912.....	3.33	7.44	37.01	122.87	325.82	632.90	921.32	77.4
1913.....	3.87	6.52	37.48	138.32	340.45	730.34	901.02	85.4
1914.....	2.54	9.78	36.93	138.85	355.86	753.81	963.23	88.3

ing x-ray and radium treatment) before they have become a menace through dissemination by the blood or lymphatic vessels. In a word, early diagnosis and immediate surgical treatment are the only procedures that offer any safety to the patient.

The compilations of the United States bureau of the census (fourteenth annual report), while not mentioning the cancer death rate in Chicago as especially high or low, show that our rate was below that of the registration area previous to 1905 and considerably above it since that year. The Chicago rate does not approach the high rates of the New England states, nor the rates of certain cities, as Albany, San Francisco and Boston, but our rate is very much in excess of that of Memphis, Birmingham and Seattle. It is quite evident from these comparisons that crude death rates, varying as they do with the different age constitutions in young and old communities, can only give fallacious deductions.

the years 1910-1911, as no compilations were made by the department in those years.

Table IV is a condensed statement from Table III, showing an increase in each six-year period with the exception of the group under age twenty years. Naturally sarcoma prevails in this group.

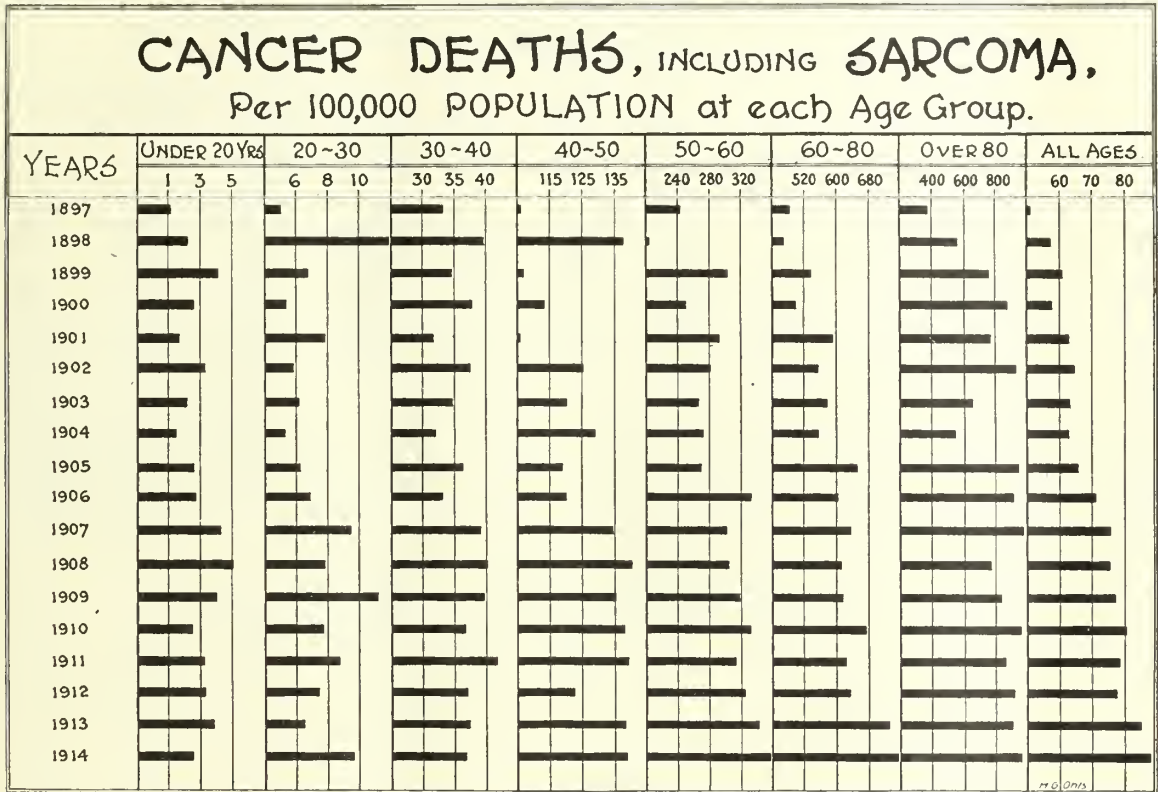
Note: The last line in table IV is in percentages.

Tables V and VI give the death rates from cancer of certain organs with the *proportion* of all cancer deaths assigned to the organs mentioned. It will be noted here that the proportion due to cancer of the stomach and liver is high in each age group, and that it is above the average at all ages above fifty years. But cancer of the uterus is absent below twenty years, reaching a maximum at the age 30-40 years in the year 1898 and in the group 40-50 years in 1914.

Comparison of Tables V and VI shows that the *proportion* of cancer of the breast increased over fifteen per cent. between 1898 and 1914,

while the *proportion* of cancer of the stomach and liver remained stationary. A comparison of the death *rates* at all ages shows an increase of 79 per cent. in cancer of the breast and an increase of 55 per cent. in cancer of the stomach and liver in the same period.

standpoints both of statistics and of diagnosis. The above tabulation, showing clearly that the rates are steadily increasing at every age, would seem to prove the increase statistically "to the hilt." And whatever difficulty the early diagnosis of cancer presents, the course of the dis-



Bashford¹ noted an increase of 28 per cent. in cancer of the female breast in England and Wales, 1897-1910. Some American writers, on the other hand, ascribe an alleged great increase in cancer of internal organs to errors of diagnosis and state that cancer of skin, breast and

ease and especially death from cancer, present such characteristic features that certainly the death certificate when cancer is alleged, the past eighteen years can claim a very high degree of accuracy. Too much emphasis has probably been placed

TABLE II.—SIX YEAR AVERAGES OF CANCER DEATH RATES INCLUDING SARCOMA PER 100,000 POPULATION AT EACH AGE.

Years	Under 20	20-30	30-40	40-50	50-60	60-80	Over 80
1897-1902	2.51	7.15	35.76	115.74	266.96	521.78	709.30
1903-1908	3.09	7.06	36.01	127.46	292.04	605.99	800.62
1909-1914	3.26	8.59	38.34	135.55	331.68	672.34	907.86
Percentage increase last 6 years over first	29.8	20.1	7.2	17.1	24.2	21.1	27.9

more accessible tissues are not increasing. The Chicago figures do not tally with either claim.

The reality of the actual increase in the cancer death rate has been questioned from the

on "errors of diagnosis." The statistics of 13,000 diagnoses of cancer confirmed by the microscope in the London hospitals in 1904-1909, as quoted by Bashford,¹ shows only 7 per cent. of errors in accessible growths and 9.3 per cent. in inaccessible neoplasms. Applying as these fig-

1. Bashford, E. E.: Review of Recent Cancer Research, 1912.

ures do to early as well as late diagnoses (Bainbridge,² page 196) it is inconceivable that errors at *death* are any where near as great.

Even so, admitting, if we must, that cancer is increasing in prevalence and being fully aware that death from cancer is far removed from the "euthanasia" that mankind instinctively craves—

cancer in general and to frighten the public unduly by extravagant statements based on figures unworthy of the name of statistics. (And he follows this with a slam at American statistics in particular.)

Bainbridge also, page 86, makes a similar statement, quoting evidently from the same

TABLE III.—CANCER OF UTERUS AND FEMALE BREAST INCLUDING SARCOMA. DEATH RATES PER 100,000 POPULATION OF WOMEN IN EACH AGE GROUP.

Year	Under 20	20-30	30-40	40-50	50-60	60-80	Over 80
1897.....	0.	2.41	24.18	65.77	100.97	164.73	99.05
1898.....	0.	5.78	27.28	81.82	144.24	152.49	47.28
1899.....	0.31	3.89	26.11	72.53	134.56	138.44	87.64
1900.....	0.59	3.73	24.91	85.19	119.13	116.40	243.30
1901.....	0.29	4.15	21.82	69.09	180.48	178.82	78.61
1902.....	0.56	1.51	37.20	78.40	146.46	171.86	184.97
1903.....	0.	0.98	22.64	78.51	113.26	154.99	144.04
1904.....	0.	3.85	26.79	102.73	153.98	196.92	237.77
1905.....	0.	1.88	30.03	87.29	131.10	177.72	132.40
1906.....	0.	3.67	23.88	68.29	166.59	157.47	156.49
1907.....	0.	4.04	34.07	109.97	159.38	201.56	183.26
1908.....	0.50	5.27	33.16	108.84	147.67	177.33	202.60
1909.....	0.	4.30	29.31	100.91	135.38	196.42	226.18
1912.....	0.47	4.46	32.68	98.31	148.85	174.41	224.66
1913.....	0.23	2.78	26.41	101.85	189.13	244.22	366.56
1914.....	0.	3.12	23.74	100.18	184.83	194.37	232.82
Average.....	1.6	3.1	24.7	78.3	130.9	155.4	158.2

it is, after all, one of the minor causes of death, constituting only 6.22 per cent. of deaths in this city in 1914. It is earnestly to be hoped that cancer may come under control before its present

source: "For the first time it is fully demonstrated that it is erroneous to make statements of a disquieting nature about the increase of cancer in general."

TABLE IV.—SIX-YEAR AVERAGES OF DEATH RATES FROM CANCER AND SARCOMA OF FEMALE BREAST AND UTERUS.

Years	Under 20	20-30	30-40	40-50	50-60	60-80	Over 80
1897-1902.....	0.29	3.58	26.91	75.46	137.64	153.79	123.47
1903-1908.....	0.08	3.28	28.43	92.61	145.33	177.66	176.09
1909-1914.....	0.17	3.66	28.03	100.31	164.55	202.35	262.55
(Excluding 1910-11)							
Increase last period compared with first.....	*41.3	2.2	4.1	32.9	19.5	31.5	112.6

*Decrease.

rate of increase places it in the same killer class with pneumonia, tuberculosis, nephritis, heart disease and enteritis.

To be quite candid I will quote a recognized

No student of the "Cancer Problem" should fail to familiarize himself with the monumental work of Bainbridge² under this title. It covers every phase of the subject comprehensively and

TABLE V.—PERCENTAGE OF DEATHS FROM CANCER INCLUDING SARCOMA AFFECTING CERTAIN ORGANS. BY AGE GROUPS—1898.

	Under 20	20-30	30-40	40-50	50-60	60-80	Over 80	Tot'ls
Of breast.....	0.	2.4	5.8	6.5	7.2	6.8	5.0	6.4
Of stomach and liver.....	28.6	35.7	30.1	41.5	44.2	48.4	45.0	42.5
Of rectum.....	0.	2.4	4.8	3.1	1.9	2.5	15.0	3.0
Of uterus.....	0.	21.4	25.2	20.5	22.8	10.0	0.	17.6
Of other organs.....	71.4	38.1	34.0	28.4	23.8	32.3	35.0	30.5

TABLE VI. BY AGE GROUPS—1914.

	Under 20	20-30	30-40	40-50	50-60	60-80	Over 80	Tot'ls
Of breast.....	0.	7.7	7.3	9.8	8.9	5.1	9.8	7.4
Stomach and liver.....	9.1	17.3	32.8	36.6	44.0	49.3	47.9	42.9
Peritoneum, intestine and rectum.....	13.6	21.1	16.1	10.0	11.1	11.7	8.4	11.7
Female genitals.....	0.	7.7	22.8	23.4	15.3	8.4	4.2	14.1
Other parts.....	81.8	46.1	20.8	20.1	20.6	25.2	2.9	23.8

authority who cannot bring himself to view with alarm the increase in cancer.

Bashford, page 12, says: "It may be asserted that it is quite wrong to talk about an increase of

the chapter summaries are invaluable for ready reference.

927 Lawrence Avenue.

2. Bainbridge, William S.: The Cancer Problem, 1914.

ILLINOIS MEDICAL JOURNAL

Published monthly by The Illinois State Medical Society, under the direction of the Publication Committee of the Council.

GENERAL OFFICERS 1914-15

PRESIDENT.....CHARLES W. LILLIE, East St. Louis
PRESIDENT-ELECT.....WILLIAM L. NOBLE, Chicago
FIRST VICE-PRESIDENT.....F. S. O'HARA, Springfield
SECOND VICE-PRESIDENT.....H. P. BEIRNE, Quincy
TREASURER.....A. J. MARKLEY, Belvidere
SECRETARY.....W. H. GILMORE, Mt. Vernon
(Ex-officio Clerk of the Council)

THE COUNCIL

District 1—EMIL WINDMUELLER, Woodstock.
District 2—EDWIN S. GILLESPIE, Wenona.
District 3—CLYDE D. PENCE, Chicago.
District 4—AUGUST H. ARP, Moline.
District 5—C. S. NELSON, Springfield.

District 6—C. D. CENTER, Quincy.
District 7—C. F. BURKHART, Effingham.
District 8—E. B. COOLEY, Danville.
District 9—FRANK C. SIBLEY, Carmi.

CLYDE D. PENCE, *Chairman*, 3338 Ogden Avenue.

Send original articles and all communications relating to advertisements and mailing list to Dr. Clyde D. Pence, Editor, 3338 Ogden Avenue.

Membership correspondence to Dr. W. H. Gilmore, Mt. Vernon, Ill.

Society proceedings and news items to Dr. Henry G. Ohls, *Managing Editor*, 927 Lawrence Avenue, Chicago.

Contributors will submit all copy for publication typewritten on standard size paper and double spaced. Copy not complying with this rule will be returned, if convenient.

JULY, 1915

Editorials

IMPORTANT NEW LEGISLATION RECENTLY ENACTED BY THE ILLINOIS LEGISLATURE.

The Legislative Committee working in conjunction with the State Board of Health were very successful in securing the passage of several important measures.

In no previous session of the General Assembly of the State of Illinois has there been so much legislation passed of a constructive character pertaining to public health as in that of the session just closed. Many measures long desired and earnestly worked for, but which have failed in former sessions, have been enacted into law during the late sitting of the assembly.

Notable among these are: A comprehensive and very excellent vital statistics law based upon the model law recommended by the U. S. Bureau of the Census; a tuberculin test law providing for the better protection of the people of Illinois against the dangers of tuberculous cattle; a school sanitation law; a law designed for the prevention of blindness from ophthalmia neonata-

torum; a strong antinarcotic law aimed at the suppression of the rapidly growing drug habit evil; a law providing for the confinement of dangerous feeble-minded persons; a law restoring power to the State Board of Health to revoke the licenses of illegal practitioners; a law providing for the establishment of tuberculosis sanatoria by counties; a revised occupational disease law, and others quite too numerous to mention in this brief review.

To the untiring efforts of the State Board of Health, the Legislative and Public Policy Committees, the State Live Stock Commission, the State Board of Pharmacy, the State Tuberculosis Association and to certain enthusiastic members of the medical profession and some public-spirited private citizens, the credit for the successful promotion of most of this constructive legislation belongs.

Among the senators very active in promoting legislation of this character, special mention should be made of Senators Cornwell, Glackin and Dailey, while in the House the following representatives rendered invaluable service: Hon. Edward J. Smejkal, the speaker; Hon. David E. Shanahan, Dr. Burres and Wm. G. Thon.

A digest of a few of the more important measures having a bearing on public health and medical practice follows:

Senate Bill 213 (Cornwell and Smejkal), provides for the registration of all births, still-births and deaths occurring in the state. Every city, town, village, township or road district to have registration official, existing officials to be employed for this purpose. Additional registrars may be appointed if convenience of citizens in rural districts requires. *Burial permits required for all deaths and still-births*; no cemetery shall accept any body for disposition without such permit. All births must be registered with local registrar within ten days; cities may require birth reports within 24 hours. All reports to be made to local registrars and local registrars must forward all original reports to State Board of Health at close of each month and duplicate copies to County Clerks at close of each calendar year. Midwives, physicians, undertakers and sextons must register their names and places of business and residence with the local registrar soon after act becomes effective. Fees for regis-

trars made charge upon county in which said fees accrue. State Board of Health to supply all blanks. Penalties are prescribed for non-compliance with provisions of act.

This law is based on the so-called model law, approved and adopted by the U. S. Bureau of the Census, adapted to Illinois conditions, up-state and down-state. When operative will place Illinois in "Registration Area." For many years repeated efforts have been made to enact a law of this character. Illinois is one of the last of the northern states to come into line.

House Bill 477 (Burres), provides for restoration to State Board of Health of jurisdiction over all licentiates—physicians, midwives and other practitioners—who received their licenses prior to July 1, 1899. For first time in sixteen years it now becomes possible to revoke the licenses of old licentiates of the board for cause. Similar jurisdiction is had over all licentiates of the period since July 1, 1899. Attempts to pass this bill met with defeat at several past sessions.

House Bill 582 (Thon), relates to the prevention of blindness from ophthalmia neonatorum by providing that any diseased condition of the eyes of any infant at any time within two weeks after birth of such infant shall be immediately reported by the physician, nurse, parent or other attendant to the local health authorities, who shall investigate case. Attendant required to advise parent of dangers of such disease and recommend prophylactic treatment prescribed by the State Board of Health. Midwives are authorized to use such *prophylactic* treatment. Hospitals and maternity homes required to keep copies of this Act posted in conspicuous places. State Board of Health to furnish a scientific prophylactic. Violations of this law declared misdemeanor punishable by fine.

Senate Bill 300 (Boehm), harmonizes the federal (Harrison) anti-narcotic law with state laws, closing some of the leaks in the federal law. Prohibits the sale by other than registered pharmacists, licensed physicians, dentists or veterinarians of any poisons or poisonous substances, opium, cocoa leaves or any compound, salt, derivative or preparation thereof and imposes a heavy penalty for making false representation to secure registration; prohibits sale of opium, cocoa leaves, or any compound or deriva-

tive by any person except upon prescription of licensed physicians, dentists or veterinarians. Notes certain exceptions to application of the Act and makes it unlawful for any licensed physician or dentist to prescribe for any habitual drug user any of the drugs hereinbefore mentioned except as a medicine, and not for the purpose of evading any of the provisions of this Act, but in all such cases shall report to the State Board of Pharmacy in writing the name of every person being so treated, with date such treatment began.

House Bill 164 (Gardner), making immoral women subject to one year's imprisonment for the purpose of curing venereal disease.

House Bill 655 (Hamlin) defines the phrase "feeble-minded person"; provides how same shall be committed to institutions; for the appointment of commissioners to make examination of such persons as are thought to be feeble-minded; manner in which commitment shall be made and makes provisions for the treatment of same while inmates of institutions and for transfer of same to asylums when necessary.

Senate Bill 305 (Glaekin), authorizing counties to establish and maintain tuberculosis sanatoria and branches, dispensaries and other auxiliary institutions and to provide by referendum a fund for such purposes by levying a tax not to exceed 3 mills on the dollar annually.

House Bill 867, prohibiting shipment of cattle into Illinois unless tuberculin tested, exceptions under certain restrictions for animals in stock yards.

House Bill 335 (Gorman), an amendment to the Embalmers' Act, requiring that applicants for state embalmers' licenses shall have two years' practical experience under a licensed embalmer.

House Bill 123 (Holaday), empowering the city council or president and board of trustees in cities and villages having fewer than 100,000 inhabitants, to establish and maintain garbage systems or plants for the collection and disposal of garbage and to levy a tax not to exceed 2 mills on the dollar on all taxable property for this purpose, in addition to the amount authorized to be levied for general purposes.

Senate Bill 182 (Piercy), providing for state supervision over the heating, ventilation, light-

ing, seating, sanitation and safety against fire in public school buildings. To conserve the health of children attending public schools. Requires the boards of trustees of school districts to withhold from school districts not complying with this law, their portion of the school funds until they so comply.

House Bill 713 (Morrasy), providing more stringent regulations for health, comfort and safety of employes in factories, mercantile establishments, mills and workshops.

House Bill 787 (Jacobson), requiring persons engaged in any business where poisonous fumes or dust in harmful quantities results, to provide working rooms for employes entirely above ground.

ALIENISTS AND NEUROLOGISTS MEETING.

The Annual Convention of the Alienists and Neurologists, under the auspices of the Chicago Medical Society, will be held in Chicago, July 12-17. On page 48 is found the complete program of this convention.

We doubt if most of our readers realize the importance of these annual meetings or the magnitude of the work accomplished. Last year there were in attendance some 400 physicians, including official representatives from state institutions of many of the states in the union.

The papers on this year's program cover an ever-increasing field of medicine and cannot fail to interest any physician, no difference what special field claims his individual attention.

As observed from this program, syphilis will receive much attention, being one of the chief causes of insanity and mental defects. The last day of the meeting will be devoted largely to the discussion of diagnosis and treatment of syphilis. This subject will be extensively discussed, and should be of sufficient interest to all physicians to insure their attendance, particularly on the last day.

ACTIONS FOR CIVIL MALPRACTICE.

Tenth Article.

ROBERT J. FOLONIE, L. L. B.,
CHICAGO, ILL.

A physician may refuse to undertake almost any case which he does not wish to attend, but

once having undertaken the treatment, he may not abandon the patient without his consent or ample notice of an intention to cease attendance. Nor can he substitute another physician of his choosing without the patient's consent. The physician having undertaken the care of the case is the reasonable judge of the number of calls he shall make, but he may not slight the case and fail to make calls because of inability of patient to pay or similar reasons.

It is the part of caution of a physician who is discharged from attendance on a patient before cure is complete, to write his patient a letter reciting that he has been discharged from the case by the patient and takes no responsibility thereafter for the patient's condition.

In the case of Dr. S, patient had a fracture of the femur, which the doctor reduced. The physician, being called from the city by business, placed the patient in charge of another physician in the neighborhood, with consent of the patient. A union resulted, but with some over-lapping of the fragments. Patient was able to get about with a cane but limped and complained of continual pain at point of fracture. About a month after all medical attention to him had ceased, he was overtaken in the night with violent pains, indicative of appendicitis. A physician was called (in no way connected with the previous attendance), who performed an appendectomy. The appendix was found gangrenous and patient died of general sepsis and shock some days later.

Suit was brought against Dr. S. for the death of the patient, on the claim that he had negligently abandoned the patient, that through want of proper care of the fractured femur an infection had resulted, causing appendicitis and death of the patient.

Unfortunately for students of etiology, the case was abandoned before trial, so that the benefit of researches of plaintiff's counsel as to the relation of cause and effect between the supposed neglect and the death are probably forever lost to the profession.

NOTA BENE.

The JOURNAL has been put to extra expense and the publication of articles has often been delayed because copy is sent in such form that it has to be typed before it can be given to the

printer. The first rule of every self-respecting printing office is: "All copy must be typewritten, double spaced, on standard sized paper."

From this date we will promptly return to writer, if convenient, any copy that does not comply with this reasonable rule.

Correspondence

HAIL TO THE CHIEF.

The following letter was received in response to the resolutions of the House of Delegates as printed in the proceedings.

THE WHITE HOUSE.

Washington, May 20, 1915.

My Dear Dr. Gilmore:

The President has asked me to acknowledge the receipt of your very kind message of May 18th, and to thank you warmly for it. He desires me to express his genuine appreciation of the action of the Illinois State Medical Society in its generous expression of confidence and support.

Sincerely yours,

J. P. TUMULTY,

Secretary to the President.

Dr. W. H. Gilmore,

Secretary, Illinois State Medical Society, Springfield, Ill.

INAUGURAL ADDRESS OF DOCTOR CHARLES W. LILLIE ON INSTALLA- TION AS PRESIDENT OF THE ILLINOIS STATE MEDICAL SOCIETY AT SPRING- FIELD, MAY 20, 1915.

*To the House of Delegates, Officers and Members
of the Illinois State Medical Society:*

Ladies and Gentlemen:

In assuming the duties and obligations of the presidency of this Society I am fully sensible of the responsibility, and appreciative of the honor it carries with it.

While it may not be possible for me to continue the progress so well established by my predecessors in this office in the increase of membership, they having worked this field quite thoroughly, still I hope that with the aid of the members throughout the state the number of

physicians not yet in the organization may be materially reduced.

Though the rapid increase in membership may not be maintained there is yet a large field for activity by all officers of the Society. The unification of the membership has not reached that degree of perfection which an organization of this character should possess; the officers have not had the cordial support of the members in many of the measures undertaken for the betterment of conditions throughout the state, both for the profession and for the laity. It is hoped that there may yet be established a more earnest spirit of fraternal fellowship in the Society; that membership in the Illinois State Medical Society may carry with it the most cordial and friendly interest in all that pertains to the good of all its members. To this end I hope to devote such of my energies as may be given to a work which I deem of the highest importance to the profession and to those whom we serve.

It cannot be denied that in many forms of human activity much reliance can be placed on mere force of numbers; an idea once expressed by Napoleon in the statement that "Providence is on the side of the strongest battalions," or words to that effect; but it is also true that small bodies endowed with the highest degree of efficiency may accomplish more than larger ones with no fitness for the work in hand. That our efficiency may be greatly increased may be readily believed, as in the past our efforts to secure legislative action have not been in proportion to our numerical strength, and when compared with some of the organized bodies of far inferior size have shown us in a decidedly unfavorable light. The reason for this difference in actual driving power is in the fact that while we have a large number of members we have not that coherence which is necessary for the accomplishment of great results. We lack in unanimity of action. We are only a number of units jumbled together but without such system and order as will make the whole mass act as one. Here is where we differ from the "unions" of labor organizations; they are seldom divided.

It is probably true that our Society is seldom or never divided upon any important question of public policy, or of professional interest; but it is also true that while we may not be divided we find that we are not united with that enthusiasm

which gives force to our endeavors. There are too many of our members who are perfectly willing to let others take the burdens and responsibilities of campaigns for betterment of conditions; perfectly willing that committees should perform the work which should be divided among the members. But this is not always the worst feature of the question. It is not unusual to find that there is a certain underlying current in opposition to just measures arising from sources whence only support should come.

I believe the remedy for this condition is to be sought through a better acquaintance among the members in the county societies. Many of these societies have members who only attend meetings once a year, and some of them not this often, and I am also firmly convinced that a regular attendance at the meetings, with sufficient time devoted to the purely social side of life at these meetings, will do more to unite the members in a common cause than all the addresses and lectures that could be given them. It is the acquaintance that tends to promote a comradeship so necessary for perfect harmony; and harmony is the keynote of concert of action.

My remedy, then, for the apathetic condition now existing in a large part of our membership, is in cultivation of the friendships of our colleagues. Let us get away from the idea of competition among the members. Let us rather feel that we all have the same ambitions; that we are all working together for the betterment of our fellowman; that our profession means vastly more than a mere means of livelihood. That we should not neglect our own families by contributing all our time to the help of our fellowmen is a fact not to be overlooked, but that the acquisition of wealth for its own sake is detrimental to the true physician is not to be denied. The avaricious doctor is a menace to the community in which he resides. The doctor who insists upon being well paid for his services by those who have abundance of this world's goods is a benefit. Free treatment for those able to pay is not charity. It is folly and is not creditable to those who practice it.

What means, it may be asked, should we adopt to bring about that desirable bond of unity in our Society? If I might offer a suggestion on this point I would say that it will surely result from meeting as frequently as circumstances will per-

mit; and always having something of a scientific, or professional character which will interest those present. And, in such places as can not have frequent meetings, provide something to strengthen the inner man; and some social converse for acquaintance sake.

I believe that one of the duties of our Society is to enlighten the public on health problems, and I would suggest as one of the best means of doing this, to reach the public through the schools and churches throughout the state. A system of public lectures by physicians should be a part of the course in every school, and I would urge our members to propose such a method to the boards of education in every city, and to the directors in the small villages and hamlets. By this course much may be done to counteract the baneful influence of the patent medicine almanac, the un-Christian scientist, the ignorant quack and pretender, the magnetic healer, the faithcurist, and other harmful agencies. By it we may better establish the organized profession as the champion of the public in every effort to maintain the highest efficiency, thus securing, in further efforts to promote the public health, a support hitherto given sparingly because of a misconception of our attitude or of our motives.

We have assumed the position of mentor in health matters, and can never recede from the position taken. It remains our duty to set forth clearly the facts regarding contagious diseases; the necessity for their prevention, and the means of such prevention; and this duty is a continuous one. It is not enough to tell it once and then let the matter drop forever. It takes the most persistent, and sometimes "pernicious" activity to bring the truths home to the public.

A little more activity in politics, with as far as possible, the obliteration of partisanship in the selection of candidates for our support, would often aid us in our efforts for the benefit of the public. County societies should see to it that candidates who are seeking legislative positions and asking the support of the doctors are in sympathy with the principles we advocate, and so far as possible are pledged to support measures proposed by the medical profession rather than that introduced by some of those who seek to enter the medical profession by the "back door."

The medical defense feature of our Society should have more publicity among the member-

ship in order that a more appreciative regard for it should be established. I would recommend the publication in the JOURNAL of more of the facts regarding the activities of the Medico-Legal Defense Committee, confident that the closest scrutiny will show the work of this Committee to be of the highest importance to the members of the Society. I would further suggest that it is well within the power of the Society to maintain a mutual Defense Department which will cover all liabilities at far less cost to the members than is now done by casualty companies.

Public Health

A COSTLY EXPERIENCE.

RIGID QUARANTINE RAPIDLY SUPPRESSES SCARLET FEVER EPIDEMIC IN CITY OF JOLIET.

Perhaps one of the most forceful demonstrations of what can be accomplished in the way of suppressing an epidemic of scarlet fever under rigid enforcement of the new state rules of quarantine, is that which presents itself in the State's administration of these rules during the last month in the City of Joliet.

On May 20, following a period of public indifference to quarantine rules, and thereby leading to the development of a serious epidemic of scarlet fever, the State Board of Health, on invitation of the city authorities, took charge of the situation and in perfect co-operation with the local officials of Joliet, set themselves to an extremely difficult task, one well-nigh hopeless of early results.

Cases of the disease were very incompletely reported, quarantine in many instances was being terminated in from ten days to three weeks, contagion spreaders were running at large throughout the city and, of course, as a consequence, the disease was mounting higher and higher by leaps and bounds.

First efforts were devoted to the correction of the non-reporting and lax quarantine evils and simultaneously to the development of a daily medical inspection service for every school in the city, as it was not the desire to close the schools if such action could be avoided. Notwithstanding the extraordinary efforts put forth, it was early seen that more strenuous measures were required to control the situation, and accordingly every school was closed and all children under sixteen years of age, excepting those engaged in gainful occupations, were required to remain upon their own premises day and night, thus being prohibited from attending Sunday Schools, nickel theatres, or any kind of public or social gathering. With the

active assistance of the police force, this rule was soon very generally complied with.

About this time two public health nurses were engaged, and house-to-house-work in the worst infected areas was begun. The immediate result was the unearthing of a considerable number of unreported and some unrecognized cases. All contacts with known cases were run down and quarantined, quite as rigidly as developed cases, for a period of seven days. Many arrests were made, some of the most prominent citizens of the city being taken into court, and in a number of instances heavily fined.

From this time to the present the epidemic has very rapidly subsided, as will be seen from the weekly reports of new cases:

Week ended May 22, when State took hold.....	
.....	32 new cases
Week ended May 29.....	30 new cases
Schools closed latter part of week.	
Week ended June 5.....	19 new cases
Week ended June 12.....	16 new cases
Week ended June 19.....	4 new cases
Week ended June 26.....	1 new case

No new cases on new premises have been reported since June 14. The cases quarantined after that date were "exposures" under quarantine as such.

The Joliet experience is but one more example of what disregard of proper rules of quarantine will do, and what efficient observance of the rules will accomplish. The experience has cost Joliet business interests a pretty penny, saying nothing of inconvenience to the citizens—the money loss alone being equal to an amount sufficient to maintain and operate a strictly first-class health department for at least ten years.

Is it not time for every Illinois city with poorly organized, undermanned, underpaid health departments, to sit up and take notice. A fair amount spent yearly for health protection service will save your city many times the amount spent and will spare your citizens the inconvenience, pains and sorrows which inevitably must befall every unguarded community.

MEASLES MUST BE CONTROLLED.

NOW REPORTABLE AND QUARANTINABLE DISEASE THROUGHOUT ILLINOIS.

STATE OFFICERS INSIST RULES SHALL BE OBSERVED BY ALL.

HUNDREDS OF MEASLES DEATHS THIS YEAR.

Measles is now a reportable and quarantinable disease throughout the State of Illinois.

The following rules relative to the control of measles must be enforced by local health authorities.

Health and other officials who fail to enforce these rules and all persons who violate them, subject themselves to a fine not to exceed \$200 for each offense or imprisonment in the county jail not to exceed six months, or both.

REPORTS—Every physician, attendant, parent, householder or other person having knowledge of a known or suspected case of measles must immediately report the same to the local health authorities.

All local health authorities shall at the close of each week advise the State Board of Health of all such cases as have been reported to them during the week. Special forms are provided for this purpose.

PLACARDING—A warning card at least 10x15 inches in size must be affixed in a conspicuous place at each outside entrance of the building, house or flat occupied by the patient. Such placards must not be defaced nor shall they be removed except on authority granted by the local health officer.

QUARANTINE—The patient must be quarantined for 14 days and until all infectious discharges and the cough has ceased, provided, however, that if there be no susceptibles on the premises and the patient is free from infectious discharges, the quarantine may be raised by the health officer whenever the patient's temperature has been normal for 48 hours.

No person affected with measles shall be removed from premises on which found to any other premises without first securing consent of local health authorities to such removal.

Children and susceptible adults must not visit the infected premises.

Adult members of the family *who have had the disease* may go about their usual business.

Susceptible children of the family may be permitted the freedom of an *enclosed* yard, provided that they do not come in contact with other children; otherwise they must remain in the house for 18 days from date of last exposure.

Susceptible adults of the patient's family should avoid mingling with children.

Dogs, cats and other household pets must be excluded from the infected premises. Any such animals which have come in contact with the patient must be subjected to a thorough disinfecting bath before being removed from infected premises.

EXCLUSION FROM SCHOOLS AND PLACES OF PUBLIC GATHERING—The patient must be excluded from school, Sunday school, theaters, picture shows and other places of public or social gathering for at least three weeks from the onset of the disease, and longer if bronchitis, inflammation of throat or nose, or abscess of ear is present.

Children of the infected family *who have had the disease* may attend school provided a physician certifies that he has personal knowledge that they have had measles. Such children must not, however, come in contact with patient or attendant.

Children who have not had the disease and *who continue to reside on the infected premises* must be excluded from school, Sunday school and all places of public or social assemblage for at least 18 days

following date of last exposure. This rule of exclusion also applies to susceptible teachers.

Children and school teachers who have not had the disease and *who have been removed from infected premises* shall not be permitted to attend school, Sunday school or other place of public or social gathering until 18 days, following date of such removal, have elapsed.

SALE OF MILK AND FOODSTUFFS FROM INFECTED PREMISES—The sale of milk and other foodstuffs from infected premises is prohibited until such time as in the opinion of the local health authorities sale may be resumed without danger of spreading the disease.

DISINFECTION—After recovery or death of the patient the sick room and contents should be disinfected by thorough washing, scrubbing and long period of airing.

Before quarantine is raised the patient should be given a disinfecting bath, special attention being paid to disinfection of hair and scalp, and he should then be taken into an adjoining room which has been disinfected and dressed in clothing which has been disinfected.

Circulating library books must not be taken into infected premises. Any such books found upon premises shall not be removed therefrom until quarantine has been raised and until such books have been specially and thoroughly disinfected under supervision of local health authorities.

Soiled body and bed clothing, also handkerchiefs and cloths coming in contact with patient or discharges from patient, should be disinfected by immersion for two hours in an approved disinfecting solution and after removal from the sick room should be boiled.

An ample supply of towels, basins, water and an approved disinfectant should always be readily available for disinfection of hands of physician and attendants.

DEATHS AND BURIALS—In the event of death, the body must be wrapped in a sheet thoroughly soaked in an approved disinfectant and then placed in an air-tight coffin, which must remain in the sick room until removed for burial. The coffin must not be opened again under any circumstances whatsoever. Interment must be within 48 hours after death. Public and church funerals are prohibited, although adult members of the family and adult relatives who have had the disease may enter the premises at the time of the funeral. Other adults and non-susceptible children may follow the remains to the grave, provided that they do not occupy carriages with those who have recently left the premises from which the body was removed.

Floral offerings must not be removed from the house and must be destroyed by burning after the body has been removed from the house.

When the body of anyone dead from the measles is to be transported by railroad or other common carrier, the official rules of the Illinois State Board of Health for the transportation of the dead must be observed.

TO MAKE PUBLIC RESORTS SAFE.

STATE HEALTH BOARD NOTIFIES SUMMER RESORTS TO
CLEAN UP.

MUST HAVE PROPER REGARD FOR HEALTH PROTECTION
OF PATRONS.

STATE AND COUNTY FAIRS ALSO GET ATTENTION.

With a view of minimizing the health menaces at summer resorts, picnic groves and amusement parks the State Board of Health is at the present time undertaking its second survey of such places in Illinois. The first state inspection of these public resorts was made last summer with results which left no doubt in the minds of the health officials that these places of recreation are, in the great majority of cases, in urgent need of sanitary rehabilitation.

Notices have been served upon all resorts in Illinois to correct their sanitary shortcomings prior to the opening of the resort season. If, upon inspection, it is found that conditions have not been improved it is the intention of the Board to give public notice of the sanitary status of such places.

Special investigations are also to be made by the State Board of Health of the county fair grounds throughout the state and of the State fair grounds at Springfield, numerous complaints having been lodged with the Board about conditions prevailing on these grounds.

In a sanitary sense the State fair grounds should be a model after which the numerous county fairs should pattern. At present, it is anything but that.

CHICAGO MEDICAL SOCIETY.

Dr. Charles J. Whalen, President.

Dr. A. Augustus O'Neil, President-Elect.

Dr. C. E. Humiston, Secretary.

Program

MEETING OF ALIENISTS AND NEUROLOGISTS.

FOR THE DISCUSSION OF MENTAL DISEASES IN THEIR
VARIOUS PHASES.

July 12, 13, 14, 15, 16, 1915.

HEADQUARTERS, AUDITORIUM HOTEL.

Meetings and Social Sessions Held at This Hotel.

Dr. H. Douglas Singer, Chairman.

Dr. W. T. Mefford, Secretary.

Monday Morning, 9 A. M., July 12, 1915.

AUDITORIUM HOTEL.

1. Address by the chairman, Dr. H. Douglas Singer, Kankakee, Ill.

2. Welcome address by the president of Chicago Medical Society, Dr. Charles J. Whalen, Chicago.

3. Address in behalf of visitors, Dr. J. C. King, Atlanta, Ga.

4. "Some Causes of Mental Diseases," Dr. C. W. Sawyer, Sawyer Sanitarium, Marion, O.

5. "The Attitude of the Sane Toward the Insane," Dr. Susan A. Price, Williamsburg, Va.

6. "Some Observations in Psychiatry," Dr. B. F. Williams, Lincoln, Neb.

7. "Feeble-Mindedness and Delinquency," Dr. Thomas H. Haines, Columbus, O.

8. "Alcohol in Its Relation to Insanity," Dr. C. E. Ellis, Chicago State Hospital, Dunning, Ill.

Monday Afternoon, 2 P. M., July 12, 1915.

AUDITORIUM HOTEL.

8. "The After Care of the Insane," Dr. Edward F. Leonard, Chicago, Ill.

10. "The Present Status of the State Care of the Insane in Florida," Dr. E. N. Greene, Chattahoochee, Fla.

11. "Abnormal Conditions of the Thyroid Gland and Its Relationship to Neurasthenia and Mental Defects," Dr. C. L. Reeder, Tulsa, Okla.

12. "Relation Between the Glands of Internal Secretion and the Vegetative Nervous System," Dr. J. B. Munroe, Charlotte, N. C.

13. "An Unusual Case of Apoplexy," Dr. W. S. Lindsay, Topeka, Kan.

14. "Functional Diseases of the Cerebrum," Dr. Charles J. Lewis, Chicago.

15. "Auto-serotherapy in the Management of the Nervous Symptoms of Pellagra," Dr. Lee Secor, Kerrville, Tex.

16. "The Constitutional Inferior Individual and the Public," Dr. A. C. Atherton, Watertown State Hospital, Watertown, Ill.

Tuesday Morning, 9 A. M., July 13, 1915.

AUDITORIUM HOTEL.

17. "The Care of the Mental Defective Not Admitted to State Institutions," Dr. Edward Ochsner, Chicago, Ill.

18. "The Underlying Principles and Purposes of the Various Methods or Systems of Treating the Different Forms of Opium Addiction," Dr. C. B. Pearson, Baltimore, Md.

19. "Psychoses in Twins," Dr. Philip B. Newcomb, Osawatimie State Hospital, Osawatimie, Kan.

20. "Prognosis in Manic Depressive Insanity," Dr. J. B. Macdonald, Danvers State Hospital, Hawthorne, Mass.

21. "The Causes of the Psychoneuroses," Dr. Meyer Solomon, Chicago.

22. Some Remarks Upon the Cerebro-spinal Fluid," Dr. Lewis J. Pollock, Chicago.

23. "Mental Hygiene in Children," Dr. E. Bosworth McCready, Wildwood, Pa.

24. Some of the Physical Manifestations of Dementia Præcox," Dr. Bayard Holmes, Chicago.

Tuesday Afternoon, 2 P. M., July 13, 1915.

AUDITORIUM HOTEL.

25. "The Relation of Pseudophephrenia and Dementia Præcox to Crime," Dr. W. J. Hickson, Chicago.

26. "The Genesis of Certain Phenomena as Interpreted in a Psycho-analytical Study of a Case of Paranoid Dementia Præcox and a Case of Hysteria," Dr. Max A. Bahr, Indianapolis, Ind.

27. "The Importance and Necessity of the Recognition of the Early Manifestations of Locomotor Ataxia," Dr. C. F. Neu, Indianapolis, Ind.

28. "The Treatment of Syphilis of the Central Nervous System by Salvarsanized Serum," Dr. Henry A. Cotton, Trenton, N. J.

29. "Periodicity in Mental Disorders," Dr. Frank P. Norbury, Springfield, Ill.

30. "Psychoanalyses and Mental Prophylaxis," Dr. A. A. Brill, New York, N. Y.

31. "What an Endowed Institution Has Been Able to Do for Indigent Insane, Not Paupers," Dr. E. N. Brush, Towson, Md.

Wednesday Morning, 10 A. M., July 14, 1915.

SESSION AT PSYCHOPATHIC LABORATORY, CITY HALL, CHICAGO.

32. Address, Chief Justice Judge Harry Olson.

33. Clinic held by Dr. W. J. Hickson.

34. Discussion, "The Dementia Præcox Problem From a Bio-chemical Standpoint," Dr. Henry A. Cotton, Trenton, N. J.

The following physicians are invited to discuss the various subjects:

Dr. Harold N. Moyer, Chicago.

Dr. Max A. Bahr, Indianapolis, Ind.

Dr. W. F. Lorenz, Mendota, Wis.

Dr. C. W. Sawyer, Marion, O.

Dr. C. F. Williams, Lincoln, Neb.

Dr. Thomas H. Haines, Columbus, O.

Dr. C. E. Ellis, Dunning, Ill.

Dr. W. S. Lindsay, Topeka, Kan.

Dr. C. L. Reeder, Tulsa, Okla.

Dr. R. N. Greene, Chattahoochee, Fla.

Dr. J. P. Munroe, Charlotte, N. C.

Dr. J. B. MacDonald, Hawthorne, Mass.

Dr. Lewis J. Pollock, Chicago.

Dr. Charles F. Read, Peoria, Ill.

Dr. E. N. Brush, Towson, Md.

Dr. C. F. Neu, Indianapolis, Ind.

Dr. Frank Norbury, Springfield, Ill.

Dr. L. Harrison Mettler, Chicago.

Dr. Tom A. Williams, Washington, D. C.

Dr. Albert E. Sterne, Indianapolis, Ind.

Dr. Richard Dewey, Wauwatosa, Wis.

Dr. M. N. Voldeng, Woodward, Ia.

Dr. Philip B. Newcomb, Osawatomie, Kan.

Dr. C. B. Pearson, Baltimore, Md.

Dr. A. A. Brill, New York, N. Y.

Dr. J. C. King, Atlanta, Ga.

Dr. G. Wilse Robinson, Kansas City, Mo.

Dr. Charles Gorst, Mendota, Wis.

Dr. George Zeller, Springfield, Ill.

Dr. H. P. Sights, Hopkinsville, Ky.

Dr. M. S. Vaughn, Jackson, Mich.

Dr. Paul E. Bowers, Michigan City, Ind.

Dr. William Healy, Chicago.

Wednesday Afternoon, 3 P. M., July 14, 1915.

AUDITORIUM HOTEL.

35. "The Loss and Waste From Inadequate and Inconsistent Planning of State Institutions for the Insane," Dr. Richard Dewey, Wauwatosa, Wis.

36. "The Organization and Development of a Public Institution for the Care and Treatment of Epileptics, Including Both a Hospital and Custodial Division," Dr. E. N. Voldeng, Cherokee, Ia.

37. "Modern Institutional Methods for the Training and Treatment of Mental Defectives and Epileptics," Dr. Madeline Hallowell, Vineland, N. J.

38. "The Present Standpoint of Epilepsy," Dr. Sigmund Krumholz, Chicago.

39. "The Psychology of the Criminal Under the Sentence of Death," Dr. Paul E. Bowers, Michigan City, Ind.

40. "On the Duties of the Prison Physician," Dr. M. S. Vaughn, Jackson, Mich.

41. "The Custodial Care and Treatment of the Criminal Insane," Dr. Thomas H. Fitsimmons, Waymart, Pa.

42. "Remedies in the Crime Situation," Dr. William Healy, Chicago.

Thursday Morning, 10 A. M., July 15, 1915.

SESSION (ALL DAY) AT CHICAGO STATE HOSPITAL, DUNNING, ILL.

Reception.

43. Dr. George Leininger, superintendent.

44. Address by Dr. H. P. Sights, Hopkinsville, Ky., "The Value of Environment, Occupation, Absence of Restraint and Harsh Treatment in the Care of the Insane."

Presentation of cases.

Thursday Evening, 6:30 P. M.

AUDITORIUM HOTEL.

Banquet in Honor of Dr. C. P. Caldwell, Ex-President Chicago Medical Society.

45. Address, "Reason and Intelligence as Applied to Medicine and Religion," Dr. Albert E. Sterne, Indianapolis, Ind.

8:30 P. M.

46. Address, Governor Woodbridge N. Ferris of Michigan.

Friday Morning, 9 A. M., July 16, 1915.

AUDITORIUM HOTEL.

47. "Reciprocal Laws of the States as Regards the Marriage of Diseased Individuals and Mental Defectives," Dr. A. M. Corwin, Chicago, Ill.

48. "What the States Should Do to Prevent the Increase of Insanity and Nervous Disorders," Dr. J. F. Kellogg, Battle Creek, Mich.

49. "The Diagnosis of Borderland Psychoses," Dr. L. Harrison Mettler, Chicago.

50. "Chronic Headaches, Treatment Based Upon Pathogenesis," Dr. Tom A. Williams, Washington, D. C.

51. "Syphilis as a Cause of Retardation in Children," Dr. J. M. Hammett, Pittsburgh, Pa.

52. "Inherited Syphilis in Feeble-Mindedness," Dr. Walter McKay, Columbus, O.

Friday Afternoon, 2 P. M., July 16, 1915.

AUDITORIUM HOTEL.

53. "Syphilis and Mental Status Among Juvenile Delinquents," Dr. Thomas H. Haines, Columbus, O.

54. "Laboratory Findings of Cerebro-spinal Fluid in Mental Defectives," Dr. Mary A. Pogue, Lake Geneva, Wis.

55. "Treatment of Syphilis of the Central Nervous System," Dr. G. Wilse Robinson, Punton Sanitarium, Kansas City, Mo.

56. "The Diagnosis and Present Status of the Treatment of Syphilis," Dr. Louis D. Smith, Chicago.

The following physicians are invited to discuss Dr. Robinson's and Dr. Smith's papers:

Dr. Henry A. Cotton

Dr. C. F. Neu

Dr. Paul E. Bowers

Dr. N. O. Kramer

Dr. Albert F. Sterne

Dr. Louise E. Smith

Dr. W. E. Douglas

Dr. W. J. Butler

Dr. Frederick Tice

Dr. Theodore Ticken

Dr. Walter McKay

Dr. John A. Nagel

Dr. William A. Pusey

Dr. W. T. Belfield

Dr. Robert H. Herbst

Dr. Arthur Wm. Stillians

Dr. N. F. McClinton

Dr. Frank Waugh

Dr. Joseph Zeisler

Dr. Frank Lydston

Dr. B. C. Corbus

Dr. S. R. Slaymaker

Dr. Ralph Hamill

Dr. George Hall

Dr. J. B. Murphy

Dr. Frank Billings

Dr. Hugo Betz

Dr. J. F. Hultgen

Dr. Adolph Gehrmann

Dr. A. M. Corwin

Dr. Hugh T. Patrick

Dr. Oscar Dodd

TUBERCULOSIS NOTES.

The general symptoms are a better guide as to the condition and progress of tuberculosis than the local findings.

The action of tuberculin, properly used in properly selected cases, is to prevent the spread of the primary focus and also heal the existing focus.

A patient presenting the general symptoms of tuberculosis, without local findings, should be strongly suspected as tuberculous.

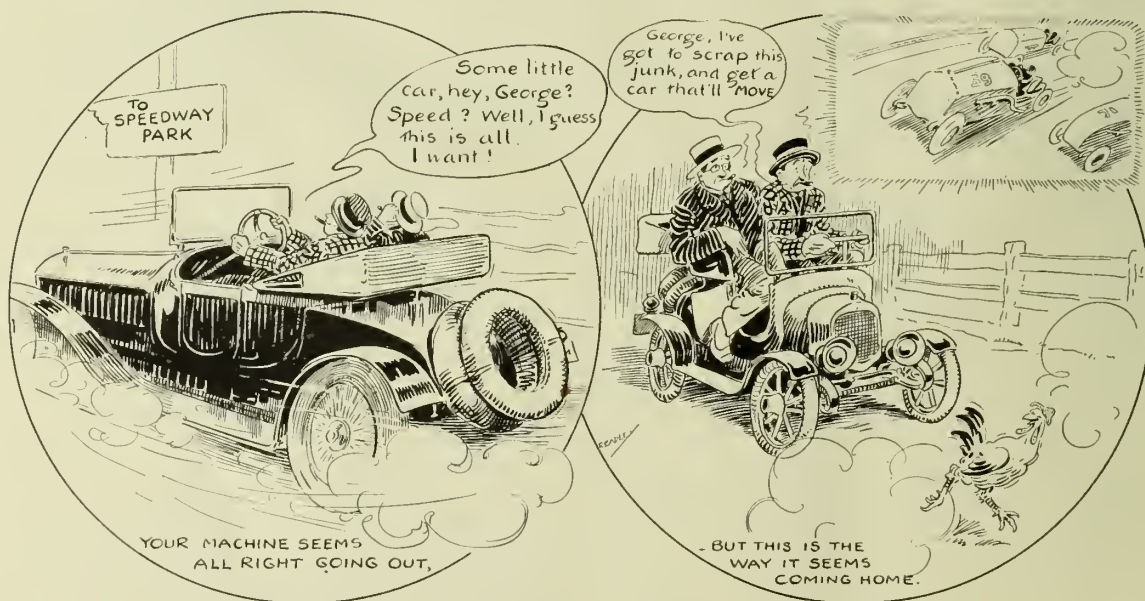
Do not forget that tuberculosis in a great many instances begins in childhood.

Because the patient looks well does not bar tuberculosis. Do not wait for that "consumptive look."

Always repeat the Von Pirquet test, if first is negative.

Home treatment is for only those who absolutely refuse sanatorium treatment.

THE ANNOYING EFFECT OF SEEING THOSE RACES



Courtesy of Mr. Bradely and the Chicago Daily News.

The Winner Covered 500 Miles in 307 Minutes, 27 Seconds!

Auto Sparks and Kicks

A FEW THERAPEUTIC HINTS TO THE GENERAL PRACTITIONER.

HARRY S. GRADLE, M. D., CHICAGO.

In our daily experience as medical men we frequently, alas! only too frequently, are called upon to minister to organisms other than the human. Our attention is required more often by one species of "dumm" beast, the four-legged, multiplex automobile, than all other forms of domestic animals combined. The therapeutic hints that I am about to mention cover some of the most common ailments of this genus. I have no intention of inflicting a long dissertation upon you, but will merely meander along the road, shedding such bits of information as I have garnered from my own experience.

Continued exposure of the animals to the summer sun frequently results in a form of dermatitis, somewhat resembling the ordinary sunburn. The shaded portions of the organism are not affected, but on the exposed surfaces there may appear a few vesicles, either solitary or in patches. These usually rupture, discharging a small amount of sterile odoriferous air and leaving an area provocative of a splenic outburst on the part of the owner. Temporary relief from this painful affliction—painful only to the æsthetic sense—may be obtained by the application of the following mixture:

R

Paint .....	..
Turpentine	aa
M. Sig.	

External use only.

Permanent cure, however, can follow only a prolonged and expensive stay in the paintshop.

Some of the species, especially of the "louse" variety suffer repeatedly from boils. This most frequently is an infection by the bacillus of carelessness. Immediate relief follows the injection of large doses of cold water vaccines into the radiator. (I wish to express my indebtedness to the Chicago public waterworks for their kindness in furnishing me with samples.) But this is not a permanent cure and has to be repeated when necessary.

In stormy weather a large percentage of the beasts, especially those past the age of puberty, suffer from a temporary edema of the central nervous system. (Synonym, "short in the mag.") This manifests itself first by peculiar spasms, similar to the ordinary cough, accompanied by tetanic jerking movements of the entire transmission. This type of pseudo-tetany has been explained as irregular heart block or incomplete internal combustion. Within a few moments after the appearance of this symptom a rapid and progressive complete paralysis occurs, which lasts until the cerebral edema has disappeared. Animation, apparently, is entirely suspended and efforts at resuscitation are useless. The inexperienced practitioner immediately opens the thorax, exposing the internal organs to further damage and accomplishing nothing. But the wise physician quietly covers the chest,

or hood, with a waterproof material, sits down with a good cigar (name of brand furnished for a stamped envelope) and waits for nature to take its course. The ultimate cure is effected by the dissipation of the offending fluid by heat, generated at the thermic center. Absolute prophylaxis is possible by the careful use of waterproofed material.

Stricture of the esophagus is not an uncommon occurrence in this form of domestic animal. It usually is due to carelessness on the part of the owner and makes itself known by various peculiar manifestations. Any undue exertion is apt to cause an intense intermittent pulmonary constriction, or "wheezing." A rapid pulse (more than twenty miles per hour) induces spasms, or, as the symptom is commonly known, "hitting only on one cylinder." The esophageal stricture that causes this symptom complex usually results from the aspiration of a small particle of brass or dirt into the feedpipe of the carburetor. Relief is obtained by the removal of the offending particle, necessarily by mechanical means, as cathartics are of no avail.

Insistence upon a complete or even partial aqueous diet is a mistake, for this genus is not only accustomed to but absolutely insistent upon its daily ration of "juice," and the sudden elimination of its pabulum has the same effect as upon a chronic alcoholic; that is, a fit of sulks. Fortunately, the mania is only temporary and an immediate cure follows the withdrawal of the offending fluid.

The automobile frequently suffers from acute gastric troubles, or, as they are termed by the laity, "carburetor troubles." There exists a condition which occurs among humans, much to their discomfort and embarrassment, but which is absolutely essential to the internal metabolism of the beast. I refer to "gas on the stomach." The physiologists have shown us that hydrochloric acid is necessary for the gastric digestion of our food and I believe that air plays the same role in the domestic economy of the beast. Certain it is that exclusion of this vitalizing element or, as the old Romans termed it, "æther," has a demoralizing effect upon the digestive metabolism, resulting in a rather obstinate interruption of peristalsis. That this has long been known is shown by a passage from Horace wherein he speaks of a hill-climb up the Capitoline, with the crowd shouting "Donate ætherum!" (Give her air!) A very similar train of symptoms results from hyperætheremia, or too much air. An absolute differentiation between this condition and anætheremia, or too little air, can be established only by therapeutic tests. Our laboratory methods are still in the experimental stage; the Wassermann reaction does not elucidate any of the dark points, and the Aberhalden fails to throw light as yet upon any of the differential diagnostic features. Even the specialists arrive at their conclusions by therapeutic experiments alone, hence I have found it a great time saver in such cases to call a consultation immediately with one or more of the low-browed specialists retained by the carburetor companies.

ILLINOIS STATE MEDICAL SOCIETY

OFFICIAL MINUTES OF THE SIXTY-FIFTH ANNUAL MEETING, HELD AT
SPRINGFIELD, MAY 18-20, 1915.

MINUTES OF MEETING OF HOUSE OF DELEGATES.

Tuesday, May 18, 1915, 2 P. M.

Called to order by Dr. Albert L. Brittin, president, at 3:30 p. m.

Dr. H. C. Blankmeyer, chairman of committee on local arrangements, took the floor to make announcements.

Committee on credentials reported on delegates. Report by the secretary, Dr. Wilbur H. Gilmore.

Roll call by the secretary.

Report of secretary, Dr. Wilbur H. Gilmore, read and approved.

SECRETARY'S REPORT.

Gentlemen of the House of Delegates:

Your secretary begs to report the collection of the following amounts from all sources, from May 1, 1914, to May 1, 1915:

COUNTY		COUNTY	
COUNTY		COUNTY	
Adams	\$ 236.50	Mason	\$ 44.00
Alexander	63.50	Massac	2.00
Bond	28.00	McDonough ..	60.00
Boone	42.50	McLean	202.50
Browne	22.50	Menard	24.00
Bureau	28.00	Mercer	36.00
Carroll	82.00	Monroe	22.50
Cass	75.50	Montgomery ..	57.00
Champaign	116.00	McHenry	10.00
Clark	74.00	Morgan	128.00
Clay	39.00	Moultrie	26.00
Clinton	33.50	Ogle	42.00
Coles	120.50	Peoria	104.00
Cumberland ...	15.50	Perry	37.00
De Kalb	48.50	Piatt	46.50
Douglas	104.00	Pike	70.50
Edgar	106.00	Pope	5.00
Edwards	18.00	Pulaski	34.00
Effingham	40.00	Randolph	44.50
Fayette	6.00	Richland	22.50
Franklin	117.50	Rock Island...	155.50
Fulton	135.00	Saline	117.50
Gallatin	18.00	Sangamon	336.00
Greene	71.50	Schuyler	4.00
Grundy	48.50	Scott	17.50
Hamilton	37.00	Shelby	29.00
Hancock	83.50	Stark	20.00
Hardin	5.00	St. Clair	144.50
Henderson ...	51.50	Stephenson ...	81.00
Henry	155.00	Tazewell	69.00
Iroquois-Ford .	91.00	Union	8.00

Jackson	93.00	Vermilion	213.00
Jasper	20.00	Wabash	30.50
Jefferson	62.50	Warren	44.00
Jersey	17.00	Washington ..	42.50
Jo Davies	42.00	Wayne	38.50
Kane	341.00	White	82.50
Kankakee	188.00	Whiteside	54.00
Kendal	16.00	Will	173.50
Knox	178.50	Williamson ...	38.50
Lake	85.50	Winnebago ...	259.50
La Salle	170.00	Woodford	100.50
Lawrence	51.00	Exhibits	212.37
Lee	6.00	Subscription ..	42.50
Livingston	26.00	Cook	5,392.00
Logan	66.50	Over charge,	
Macon	144.50	Folonie	100.00
Macoupin	165.50	Over charge,	
Madison	188.00	Rogers & Hall	2.50
Marion	42.00		
Marshall - Put-		Total	\$12,883.37
nam	41.00		

For the same period 208 voucher checks were drawn for the total amount of \$23,257.68. Of this amount \$17,254.55 was expended in the general expenses of the society and for publishing the journal and \$6,003.13 for Medical Defense. This sum is largely in excess of the amount reported last year, but it contains the bills paid at the first meeting of the Council during the annual session of 1914 amounting to \$6,394.30, and \$2,363.08 paid at a Council meeting held April 21, 1915, which was not true for the report rendered in 1914. In addition the expenses of the Medico Legal Committee for the past year were \$1,833.22 in excess of the amount expended for 1913-14.

No especial effort has been made during the past year to increase the membership of the Society. In September, 1914, your secretary advised the secretary of each component society that it would be entirely up to the local membership as to whether the membership of the Society increased or decreased. At the same time the names of all members in arrears for 1914 were listed, and the co-operation of the local secretary asked in collecting the amount due. In many counties the men went to work with a will, and the roster of the State Society shows a net gain of 408. Six hundred and forty-one names were added to the roll, 193 dropped from membership and 40 lost by death, the membership May 1, 1915, being 6,501. It seems that the scheme of putting representatives of the A. M. A. into the field to solicit members for the Society which was adopted by several States has not been particularly successful in Illinois in so far as permanent members are concerned. I have been advised by several secretaries of component bodies that many of the members thus secured never attended a meeting of their societies and were too uninterested to keep up their membership.

The collection of the per capita tax has been difficult during the past year, due, no doubt, to the number of members who were secured through personal

solicitation and the money stringency which in some localities has been very serious, many people not being able to meet their living expenses, to say nothing of helping the family doctor meet his.

The usual report blanks were sent out during the month of December, and in a letter accompanying them the local secretaries were asked to be sure to get them in as early in the year as possible. As usual the response was not particularly prompt, as on May 1 only 32 reports had been received at my office.

Your secretary has been present at every meeting of the Council, four meetings of the Committee on Constitution and By-Laws, one meeting of the Scientific Committee and several county and district societies.

The interest in affairs medical by the profession over the State is, I think, normal. It ranges from one society with a total membership of 28 and an average attendance at meetings held monthly of 21, to a county in the same neighborhood without a meeting for the entire year, the members at this time thinking very seriously of surrendering their charter. In this county I think a determined effort will be made in the near future to arouse the members to their possibilities. I want to insist again that the duty of the profession is not to the great societies who always have from 30 to 60 members present at every meeting, but to the little fellows who are afraid they will lose a patient if they attend a meeting. In the small societies of from 5 to 20 members lies the largest field for real medical progress. It has afforded your secretary a great deal of pleasure to tell these societies, through their secretaries, the scheme adopted by the live wire society mentioned above to get out its membership, but if any of them have tried it, I have not been so informed.

I am firmly convinced that the only way the small medical society can be made a success is to appeal to the membership in a social way, and let the scientific side take care of itself. It follows naturally that once a body of medical men are together that they will discuss their means of livelihood.

Respectfully submitted,

W. H. GILMORE,
Secretary.

Report of the council read by Dr. Clyde D. Pence, and approved.

REPORT OF CHAIRMAN OF THE COUNCIL.

As chairman of your Council, it is my official duty to make a report to the House of Delegates of the work accomplished by the Council during the last year.

The Council has held five meetings since the session of the last House of Delegates, the first one being immediately after the adjournment of the House of Delegates, at Decatur, last May; one in Chicago, June 30, 1914; one in Chicago, Oct. 28, 1914; one in Springfield, Jan. 12, 1915; one in Chicago, April 21, 1915.

At the organization meeting of the present Council

the following officers and committees were appointed or elected:

Chairman of the Council—Clyde D. Pence.

Finance Committee—Dr. Brittin, Dr. Nelson, Dr. Sibley.

Publication Committee—Dr. Nelson, Dr. Cooley, Dr. Center.

The editor of the JOURNAL for the past year was also elected at this meeting.

Your president, during the past year, has been quite active in the work of the Society, wishing to secure the largest membership possible and to maintain the highest efficiency of the Society. That he has been successful in his undertaking is confirmed by the various reports read to you today. The Society has increased in membership, now having a total of 6,501.

The work in the various component societies has probably been greater during the past year than at any previous year in the existence of the Society.

Your committees, appointed for various duties, have been active and have accomplished much in the way of work for the Association.

LEGISLATIVE COMMITTEE.

We would call your attention to the importance of the work done and the demands upon the legislative committee. At each session of the legislature there are always vicious measures introduced, which, if enacted, would be detrimental, not only to the Society, but also to the commonwealth at large. It falls upon your legislative committee to defeat, so far as possible, such legislation, and, owing to the activities of an ever-increasing number of cults and pathies, wishing to gain admission under some practice act, this work also increases each year. It is also the duty of this committee to help promote legislation which is for the good of the Society's members. This committee is one of the most important committees of the Association, and it should have everything possible conducive to the most efficient committee work.

At each Annual Meeting for a number of years your *Medico-Legal Committee* has reported to the House of Delegates, usually making some recommendation. These reports have been received and apparently have been tabled, as the affairs of that committee have proceeded along the same general lines, except that it has been gradually giving more to the members in regard to malpractice defense, until at the present time it is providing full defense (not paying judgments) for the same fee—\$1.00 per year. We wish the service might be maintained or improved and the same rate obtain.

It is the opinion of your Council that this will not be true much longer, as each year the expenses of that committee become larger, owing to the fact of an ever-increasing number of malpractice suits or threatened suits. It is our opinion that the Illinois Society is doing more and giving more medico-legal service than any other society. Several of the other states have patterned their medical defense after that of Illinois, but none are giving superior service.

Your medico-legal committee has already adopted a

more businesslike method of handling malpractice suits, and this, in a measure, will reduce the cost of defense, but at the present rate of increase in number of suits, it is, in our opinion, only a short time until the fee will have to be raised, and should be done at once, so that a rather large fund may be maintained. A large defense fund is, in itself, some protection against suits being instituted.

In general the activities of the Society, in all directions, are increasing. Each year adds new functions and responsibilities, and, eventually, these will cost the Society more money.

THE JOURNAL.

The JOURNAL has been conducted in the same general way as last year, making no radical change during the year. It gives me considerable pleasure to make this portion of the report. You will recall that for several years prior to two years ago, the JOURNAL had a large deficit; that within a few years the amount of this deficit reached about \$26,000.00—in other words, the income from the JOURNAL was very considerably less than the cost of producing it. Two years ago the contracts called for an annual income from the JOURNAL of \$3,146.75. The actual income was somewhat less than this because of uncollected accounts. In my report to the House of Delegates in 1914 we showed advertising contracts for the year, the income from which would be approximately \$8,000, and I presumed at that time that the JOURNAL was out of its financial difficulties. This presumption, however, was short-lived. The European war came and the advertising business slumped very materially. We lost a number of valuable advertising contracts. Several firms became embarrassed, making some accounts uncollectible. This necessitated replacing some of the old contracts with new ones, which, owing to the great business depression, was like hunting for the proverbial needle in the hay stack.

In spite of these facts, the treasurer's report shows that the JOURNAL has paid into the treasury, since our last Annual Meeting in May, 1914, \$8,200.00, and our books show that we still have uncollected accounts for the year amounting to approximately \$1,054.80, most of which will be collected.

At the present time the JOURNAL has advertising contracts calling for an annual income of approximately \$8,000.00. During the year a few of these contracts will be voided, but there will be other new contracts, which will more than take their place. The cost of producing the JOURNAL for the year is as follows:

Rogers & Hall, for publishing:

June, 1914	\$ 522.22
July, 1914	489.53
August, 1914	499.60
September, 1914	467.47
October, 1914	1,294.23
November, 1914	504.07
December, 1914	512.82
January, 1915	522.78
February, 1915	573.56

March, 1915	522.92
April, 1915	517.14
May, 1915	514.53
	<hr/> \$6,940.87

Editor	900.00
Assistant Editor	720.00
Postage	865.24

\$9,426.11

Total receipts from JOURNAL.....\$8,428.60

Disbursements:

To Treasurer Markley.....	\$8,200.00
Commissions	122.16
Reporting	99.10
Rebate	2.00

\$8,423.26

Balance in Bank 5.34 \$8,428.60

Total Receipts\$8,428.60

Uncollected Accounts for the Year 1,054.80

\$9,483.40

It will be seen from this statement that when the uncollected accounts for the year, which are mostly the running accounts from the last sixty days, are paid, the JOURNAL will have paid its way for the year. This statement includes the special October issue, the cost of which number was.....\$1,294.23
Total receipts from that number were..... 733.65

Leaving a balance which it cost the Society to publish that number of.....\$ 560.58
The average cost of the JOURNAL per issue, exclusive of the October number, was.....\$ 513.33

Council report read by Dr. Clyde D. Pence, for District No. 3, and approved.

COUNCILOR'S REPORTS.

THIRD DISTRICT.

The component societies in District No. 3 are in a good, thriving condition.

Activities and general interests of the Chicago Medical Society and its 15 component societies have never before been so great as this year. A number of new names have been added to the membership list, but there are still too many non-members. The activities of these societies cover a large field, and new features are constantly being added to their work. The membership of Cook County, in good standing, at present is 2,667. I cannot report the number of non-members in Cook county, nor can I tell how many of this class would be eligible to membership in the society.

Kankakee County Society numbers 47 members, although 8 of these have not paid dues for this year. There are 14 physicians in the county who are not members of the Kankakee County Society. This number should be reduced somewhat.

Will County Society has 51 members. There are 32

physicians in the county who are not members of the society. The number of non-members in this county is entirely too large, and we would urge the organization committee of Will County Society to induce some of these non-members to join the society.

Lake County Society has 53 members, with only 6 physicians in that county who are not members. The interest in this society is good.

Report of the treasurer, Andrew J. Markley, read and approved.

TREASURER'S STATEMENT.

REPORT OF GENERAL FUND—MAY 16, 1914, TO MAY 15, 1915.

Balance May 16, 1914.....	\$ 1,677.64
Received W. H. Gilmore.....	\$ 8,139.87
Received Medical Journal	8,400.00
Received Armour & Co.....	25.00 16,564.87
	<hr/>
	\$18,242.51
Vouchers Paid	17,157.35

Balance

MEDICAL DEFENSE FUND—MAY 16, 1914, TO MAY 15, 1915.

Balance May 16, 1914.....	\$13,994.75
Received from W. H. Gilmore.....	5,498.50
	<hr/>
	\$19,493.25
Vouchers Paid	6,127.63
	<hr/>
	\$13,365.62

Motion by Dr. J. W. Van Derslice that regular order of business be suspended and chairman of medical legislation committee be called upon to give a report. Motion carried.

Report of the committee on medical legislation, read by Dr. L. C. Taylor.

REPORT OF COMMITTEE ON MEDICAL LEGISLATION.

As the Forty-ninth General Assembly is still in session, it is impossible for your committee on medical legislation to make a complete report at this time.

Quite a number of bills affecting the interests of the medical profession are now under consideration. Among the first to be introduced is House Bill No. 9, providing for a board of examiners for so-called optometrists. This is the usual bill presented in former sessions. It was referred to the judiciary committee, where your chairman asked for a hearing for those opposed to its passage. At this hearing there appeared Drs. Pence, C. J. Whalen, Noble and Guilford of Chicago, and Dr. Smith of Bloomington. Later on, with but a few members of the committee present, it was voted out with favorable recommendation and is now on third reading in the House. Your committee would recommend that a resolution protesting against the passage of this bill be adopted by the

house of delegates and a copy of the same be forwarded at once to every member of the legislature.

House Bill No. 582, introduced by Representative Thon, provides for the reporting of all cases of ophthalmia neonatorum and was reported out of the judiciary committee with unanimous recommendation that it do pass and is now on third reading. This bill was opposed by the Christian Scientists and the so-called League for Medical Freedom. The opposition seemed to rest on the ground that it took from the parents the care of their offspring. The bill was amended so as to make treatment optional, which should remove all reasonable objections.

House Bill No. 477, introduced by Representative Burres, provides for jurisdiction by the Board of Health over all certificates to practice medicine in the state. This measure passed unanimously the House on May 13, and there is reason to believe it will also be favorably voted upon in the Senate. At this time, the Board of Health has jurisdiction only over certificates issued since 1899.

Senate Bill No. 213, providing for the registration of births and deaths, introduced by Senator Cornwell, was passed on April 28. As many of you may know, the vital statistics of the State of Illinois are made out under a law not satisfactory to the government at Washington. This measure has been accepted by the government and will doubtless pass the House at this session. Strong opposition has prevented its passage at previous sessions of the legislature. Dr. Drake, secretary of the State Board of Health, was accorded the unusual privilege of addressing the Senate, explaining its provisions, after which it passed without a dissenting voice. In the House, it is under the control of Representative Smejkal, who has always supported measures favored by the medical profession.

House Bill No. 592, introduced by Representative Burres, a bill to re-organize the health department of the state, originated from the committee of efficiency and economy, appointed by the last legislature and composed of members of both houses for the purpose of revising many laws of the state, provides for radical changes in the administration of health matters and of licensure. It provides for a commissioner of health, a board of health, a board of medical examiners, and abolishes the board of pharmacy and board of examiners for nurses. This bill met with opposition upon the part of physicians, pharmacists and nurses and is now in the committees of the two houses, to which it was referred, and will probably rest there for the remainder of the session.

Referring to former reports of your committee on medical legislation, we again emphasize the importance of the local societies familiarizing themselves with the position taken by the medical profession in regard to legislation affecting our interests. It should not be forgotten that the legal profession controls absolutely the licensure of its own members. They practically pass all laws affecting their admission to practice and are the court of last resort in all procedure for unprofessional conduct. On the other

hand, laws regulating the practice of medicine originate from the same source, and a certificate to practice cannot be revoked unless sustained by the same tribunal.

When the medical profession demands one portal of entry for all who desire to attend the sick, we are only asking for what already exists in the legal profession. We take the position that the state should not place its stamp of approval upon any individual to practice who is not versed in the fundamental principles of medicine. The scientific world to-day stands as a unit upon the etiology of disease and no teachings of cult, sect or dogma should swerve us from our duty to ourselves and the public.

Suffering humanity is always an easy victim to the persuasive offers of the incompetent, and it devolves upon every medical man to use his influence against those who would commercialize our profession.

L. C. TAYLOR,
N. M. EBERHART,
J. H. BACON,

Committee on Medical Legislation.

Motion by Dr. Anderson that the report of Dr. Taylor be accepted and that a committee be reported to draft a resolution, in accordance therewith, to be sent to the legislature. Motion unanimously carried.

Dr. Britton appointed Drs. L. C. Taylor, J. W. Van Derslice and Dr. Chas. J. Whalen.

Springfield, Ill., May 18, 1915.

Be It Resolved, By the House of Delegates of the Illinois State Medical Society in annual convention assembled, representing more than 6,500 physicians of this great state.

That we hereby express to our Chief Executive, President Wilson, our confidence in his lofty purpose and unselfish devotion in conducting the affairs of his high office; and further pledge our support of his every effort to guide the Ship of State safely through the troublous waters of international disturbance.

The above resolution was presented by Dr. C. F. Burkhardt, of Effingham, Ill., and unanimously adopted.

This 18th day of May, A. D., 1915.

Attest:

W. H. GILMORE,

Secretary Illinois State Medical Society.

Note: The answer received from the White House appears under Correspondence.

Dr. Chaplin: There is a House bill being introduced in the legislature providing that prescriptions be written in English. I didn't hear

any mention made of that in the report of the committee. I would like to ask Dr. Taylor if any account has been taken of it. It provides that it shall be unlawful for any pharmacist to fill a prescription not written in English.

Dr. Taylor: I would state that in every legislature we have a lot of bills introduced and I would not take up your time in presenting those in our report. We did not regard the bill requiring the prescription to be written in English as having a chance in a million to pass this legislature, consequently I did not think it worth while to make any mention of it. It is a freak bill, originating from some source probably opposed to the medical profession, and like a good many bills of that sort, it went to the waste basket and will remain there.

Dr. Hall: I want to introduce a resolution regarding the Medical Practice Act.

Like most physicians, I am for anything that will uphold the standards of the practice of medicine. This Medical Practice Act was written with a view to requiring certain standards of all who practiced medicine. That in a measure eliminated all the quacks that were using medicine, either externally or internally. But with the limited definition of the term "practice of medicine," and the constructions that are placed on this act, it is a fertile field for all kind of quackery, quacks and fakers who pretend to diagnose and treat diseases without the use of any drugs. We have a man who calls himself "Doctor," and who calls himself "Professor" and he styles himself the "Eye Specialist" and who, with nothing more than a cheap lot of spectacles, goes over the country and pretends to treat all diseases of the eye, whether it is iritis or glaucoma or refraction, fitting glasses. Then we have the magnetic healers, who claim to be endowed with some supernatural power, whereby with a wave of the hand or some other hokus pokus they can cause all disease to disappear, provided the central victim has faith of the necessary kind. Then we have the world renowned specialist from London, New York, Chicago, or perhaps France, who will drop into town for one day and advertise himself as a specialist; he will diagnose practically everything as some disease of the liver and will sell his victim a liver pill. It is almost unthinkable in this enlightened day and age of the world, that anyone would be caught in the

clutches of one of these fakers, yet such is the case. I know of a young man, suffering from a traumatic cataract, caused by an injury many years ago, who paid one of these magnetic healers two dollars a treatment for two or three weeks. I know of a lady who is suffering from an ulcer which she has been trying to cure by doctoring to get one of her vertebrae back in its proper position. I knew of an old lady several years ago, suffering in the last stages of pulmonary tuberculosis, who visited one of these world renowned specialists stopping in my town for a few days, and he induced her to dig up thirty-five dollars for liver pills. It is useless to say that the young man still has his cataract, that the lady still has her abdominal ulcer and that the old lady who suffered from pulmonary tuberculosis is dead, lo, these many years, and she will not meet any more of these fakers. (Applause.)

The most important function of any state or nation is to conserve the lives and health of the people.

A Voice: I move that that be referred to the committee on legislation and come through the committee to this body.

Motion seconded.

The President: It has been moved and seconded that this be referred to the committee on medical legislation. Are there any remarks?

Dr. Taylor: I think we should listen to the resolution. Motion to refer to committee prevailed.

Dr. Anna Dwyer: Mr. President, I have a resolution regarding the commitment of feeble minded in the State of Illinois, and if it is the pleasure of the house and the president, I would like to read it.

WHEREAS, there is now no suitable legal provision made for the commitment and care of the feeble-minded persons in the state of Illinois and,

WHEREAS, this lack of provision results in much injury to the feeble-minded persons of our state by failing to give them the protecting care which they need in their unequal struggle for existence, and,

WHEREAS, there are now before the state legislature House Bills No. 653 and 654 admirably correcting these defects in our laws; therefore, be it

Resolved, that the House of Delegates of the Illinois State Medical Society today in formal session assembled heartily endorses the above bills and recommends them for passage at the present session of the legislature.

Resolution adopted.

The President: We will now proceed with the regular order of business, and in accordance with the regular order of business the president's report will be offered at this time.

PRESIDENT'S REPORT.

May 18, 1915.

To the House of Delegates of the Illinois State Medical Society.

Gentlemen: As president of the Illinois State Medical Society, it affords me pleasure to report to your honorable body that the Society is now at the highest point in its history, when considered numerically as well as to its organic efficiency. Throughout the state harmony prevails in the membership, factionalism is disappearing and a better state of feeling now exists than has been the case in many years past. In the year past there has been a gain in membership of about 500. During my term of office I have visited every part of the state and find an increased interest in the organization manifested in every locality.

Illinois physicians are attending medical society meetings in the smaller as well as the larger component societies. Important among the functions of the society is the matter of medical defense and it is my belief that this feature should be more fully explained to the rank and file of the membership, to the end that a better defense can be given the members if they follow a more perfected system, when availing themselves of its benefits. This branch of the organization in the past year has been very active; something like 100 cases tried, with one judgment rendered against a physician, but this case has been appealed. The Defense Committee is rendering very efficient service.

The Legislative Committee has been very active and efficient in the discharge of its duties, and I ask your special attention to its report, as it covers the ground very completely.

The Committee on Public Policy this year inaugurated a new departure in the way of furnishing medical speakers to fill the various pulpits of this city on public health day, Sunday, May 16. A movement which was heartily endorsed by the local ministerial association and proved to be a very welcome innovation to the residents of this city, and a means of public education of the laity, which, if followed out, will prove to be productive of much good.

The new section on public health and hygiene is especially worthy of commendation, is doing much very valuable work and is one of the most important sections of the State Society.

The various sections of the society are doing splendid work and the program for this meeting, from a scientific standpoint, is one of exceptional value. The clinics held during this meeting attract the attendance of many of the most noted medical men of the middle west.

Especially worthy of comment is the JOURNAL of the State Medical Society. This JOURNAL, which was formerly a liability of the organization, has now be-

come self-sustaining and is in reality a valuable asset. Dr. Pence, the editor, has devoted much time and effort to bring the JOURNAL up to its present standard and is deserving of commendation for his achievement in this direction.

Every member of the Illinois State Medical Society has cause for self-congratulation on being identified with one of the really great scientific bodies of this country, and it should be the aim of the entire membership to put forth every effort to make this the greatest State Medical Society in the Union.

In the mind of every right thinking medical man there is, from the very beginning of his career, the ambition to so govern his actions and direct his efforts in the profession of his choice that he may receive recognition at the hands of his co-workers. In the medical profession of this state there can be no higher honor than to be chosen as president of the Illinois State Medical Society. This honor and distinction has been conferred on me by my associates, and at this juncture it is my wish to again express to them my gratitude and appreciation of such recognition.

In the life work of every professional man there is a point of highest achievement, a pinnacle, so to speak, in his career, to attain which all prior efforts in life have been directed.

To serve as superior officer in the organization of the profession to which I am proud to owe allegiance, is a distinction to be coveted by any medical man, no matter how eminent he may be.

The last duty to be performed by me in my official capacity is one of the most pleasant that has fallen to my lot. The duty referred to is that of transferring the gavel, the emblem of authority, into the hands and keeping of my successor. The Illinois State Medical Society has honored itself in choosing as its presiding officer to succeed me one of the ablest, cleanest professional men of the state. A man who for almost a quarter of a century has been identified with the interests and advancement of scientific medicine in Illinois. A man whose character and reputation are as clean and spotless as is the flower whose name he bears. Ladies and gentlemen, I have the honor of introducing to you the incoming president of the Illinois State Medical Society—Doctor Lillie of East St. Louis. Ladies and gentlemen, Doctor Lillie, now president of the Illinois State Medical Society.

I thank you.

Report accepted as read.

The President: We will now have the report of Councilor Gillespie, of the Second District.

Report accepted as read.

The President: We will next have the report of Dr. C. S. Nelson, of the Fifth District.

FIFTH DISTRICT.

I take pleasure in presenting herewith my second annual report as Councilor of the Fifth District, comprising the counties of Sangamon, Menard, Mason,

Logan, Tazewell, McLean, DeWitt, Iroquois and Ford.

In the aggregate the nine counties report a membership of 411, which is a gain of 13 over last year. There have been fourteen removed from their respective counties, and four deaths, making a loss through removals and death of 18, and taking this into consideration, would really mean a gain of 31 in membership.

The larger counties like Sangamon and McLean, show substantial gain in membership. The other counties seem to be "holding their own," with the exception of Iroquois-Ford, which reports a loss in membership from 64 to 58. Four new members and ten suspensions. Why there should be this number of suspensions was not explained. I trust this society will be able to make a better report next year.

I find that greater enthusiasm is manifested in those counties where monthly meetings are held, and I would advise all county societies in the Fifth District to try and get together at least once a month. Interest can also be stimulated in county societies by inviting some specialist occasionally to address them, thereby making it profitable to those who attend as well as fraternal. This has been the plan of the Sangamon County Medical Society for the past several years, with marked success.

I find that the bulk of the work for success in county medical societies rests upon the faithful secretary, and I trust every county society will be fortunate enough to secure a man who will be willing to sacrifice enough of his time and talents for the good of the cause, until every eligible physician is brought into the field.

Respectfully submitted,
C. S. NELSON,
Councilor, Fifth District.

Report accepted as read.

The President: We will next have the report of the councilor from the Sixth District, Dr. C. D. Center.

Dr. Center: Mr. President and Gentlemen of the convention: The councilor's report for the Sixth District will be a verbal one.

On the whole I think the year has been a favorable one. Greater interest has been shown in the county societies having regular stated meetings. In these societies also there has been found a greater enthusiasm on the part of the individual member which works to the benefit not only of the companion societies, but of the State Society. That enthusiasm on the part of the individual member is shown largely in the work that the individual members are doing in getting into the organization the eligible practitioners in the county.

In counties having irregular or infrequent

meetings the interest is deficient, and the good which might be obtained within the county organization is lost.

Your councilor visited seven of the counties within his district during the year, some upon invitation, some on his own initiative. There have been no occasions for his services as peace-maker. Summing up, therefore, it is the opinion of your councilor that the past year has made advances in the Sixth District. Respectfully submitted.

Report accepted as read.

The President: We will now listen to the report of Dr. C. F. Burkhardt, of the Seventh District.

Dr. Burkhardt: Mr. President, I have a very brief report. I beg leave to submit as my report of the Seventh District for the year 1915, that it has made a fair average increase. There are some counties in the district that should do much better than they are doing. I sincerely hope that in the near future that in the few counties where the interest in the meetings is below the average we may be able to bring about a renewal of interest. It is my opinion that a meeting of the whole councilor district at some central point in the district would be a very potent factor in bringing about encouragement and renewal of interest in the work of the county society. I therefore hope that we can secure the conference co-operation of all the county societies in my district during the present year and thereby bring about one central district meeting. I have made three councilor visits during the past year, and I might add as a comment that I do not think we always accomplish good by making visits. I do not believe in making a visit to a county unless there is enough interest, or there is enough demand in other words for your services as a councilor to make a visit, and I have only made such visits as I deemed necessary. During the past year I have made three visits. I have been present at all meetings with the council during the past year. Respectfully submitted.

Report accepted as read.

The President: We will now have a report from Dr. E. B. Cooley from the Eighth District.

Dr. Cooley: Mr. President and Gentlemen: I beg leave to submit the following report:

EIGHTH DISTRICT.

Your councilor from the Eighth District, which

comprises the counties of Champaign, Vermilion, Douglas, Edgar, Cole, Clark, Cumberland, Jasper, Crawford, Richland and Lawrence, begs leave to report as follows:

The profession was never more alive to its own interests in the Eighth District than now, having been for years in a high state of organization; it has been necessary to spend little time along these lines. There is in every county in the district a good working organization.

Nothing has remained to do except to move forward in the work for which this organization is maintained. In the matter of membership, we can report no gain and little gain may be expected in this district, other than that which would naturally accrue to an increased population. Few eligible men remain outside of the societies.

Your councilor has made fewer visits than in former years, this because of the fact that your thoroughly organized county society requires little assistance from outside sources.

We cannot refrain from reiterating our annual statement that we still believe in and confidently urge the importance of frequent county society meetings.

Most of the societies in the Eighth District meet monthly and to this fact more than any one thing, we attribute our successful organization.

Respectfully,

E. B. COOLEY.

Report approved as read.

Dr. Cooley: Mr. Chairman and Gentlemen of the House of Delegates: Your committee on revision of the constitution and by-laws beg to submit the following report:

REPORT OF THE COMMITTEE ON CONSTITUTION AND BY-LAWS.

Your Committee on Revision of Constitution and By-Laws beg leave to submit the following report:

One of the purposes for which the Illinois State Medical Society was founded, as clearly set forth in Article II of the Constitution, is to bring into one compact organization the entire medical profession of the state of Illinois, etc.

From a little band of faithful men, men with exalted ideals and altruistic purposes, the Illinois State Medical Society has developed into a gigantic organization with all of the complexities, responsibilities and vexatious situations that must accrue to a multiplicity and diversity of membership, such as ours.

The unmistakable increase in alleged malpractice suits, makes a strenuous effort toward the conservation of our rapidly diminishing Medical Defense Fund, imperative. Your committee has, as briefly as compatible, with the exigencies of the situation, safeguarded the society against the useless expenditure of money upon a meritorious member and has undertaken to preclude the possibility of gentlemen not in good standing, rushing to cover at the sound of alarm—for protection only. We commend Section 6 of the By-

Laws to your careful consideration and shall particularize in regard to no other.

Inequalities in professional efficiency will always exist. Antagonistic professional ideals and ethical uncertainties may, but geographical lines must never be drawn in this great state society.

Five years ago this House of Delegates undertook to revise the Constitution and By-Laws of this society. Since that time one committee has succeeded another with refreshing regularity and has disappeared with the punctilious passing of the annual hydrangea.

This undertaking has become a hoax and this hoax has become a business proposition. This committee and its predecessors have been maintained the past five years at a cost to the society of more than \$1,000, to say nothing of the profitless toil of thirty-five men who have worked in relays for the same period.

The turmoils of this House of Delegates in years gone by were not unknown to your present committee. Nothing has been overlooked. Every known opinion has been ably and loyally championed by some member of this committee.

They have earnestly striven to present a report that would be acceptable to this House of Delegates. Every move has been made in good faith and good faith has been kept. Every member has generously striven to assist in the accomplishment of this common purpose and one could not fail to be impressed by the even justice with which its members have met situation after situation, fairly and squarely, without apology or equivocation, but with an evident determination to maintain a strict neutrality.

The revision offered does not escape the criticism of a single member of the committee. We do not expect it to escape the criticism of a single member of this House, still we are unanimous in offering it as the result of our best efforts to harmonize every known opinion upon contingencies, too well known to this House of Delegates to require enunciation.

Respectfully submitted,

COOLEY,
STUBBS,
LEWIS,
GILMORE,
HARVEY,
LILLIE.

Motion to make the consideration of the constitution and by-laws a special order of business in the next session to which the House of Delegates adjourned. Motion prevailed.

Dr. King: Mr. Chairman, there was a committee appointed a year ago, a committee for the survey of medical defense; I would like to make that report now if the house wishes.

The President: If there is no objection you can present the report.

Dr. King: Mr. Chairman, Ladies and Gen-

tlemen of the House of Delegates of the Illinois State Medical Society: This I will state is the report of the special committee that was appointed a year ago by Dr. Whalen to make a survey of the medical defense, as carried on by the various state societies.

REPORT OF THE COMMITTEE OF MEDICAL DEFENSE SURVEY.

Gentlemen: Your committee has been in communication with the several states and has received replies from twenty-three, all of which have a medico-legal defense of some sort, although they differ widely in method and administration. As a preamble to this report we are constrained to quote from a paper of Dr. George W. Gay of Boston, entitled "Suits for Alleged Malpractice," as follows:

"Suits at law against reputable physicians for alleged malpractice have attracted unusual attention of late years, by reason of their increasing frequency, and by the absence of reasonable foundation of truth and justice in the charges usually brought against the defendant. Litigation, like legislation, was never so rampant as today. The multitude of lawyers, the bewildering mass of statutes, the ever increasing volume in both, only tend to aggravate a condition which would seem already to be too complicated for the public welfare. The craze for legal proceedings, upon any and all occasions, however baseless the charges, the desire to seek revenge for injuries, real or imaginary, the temptation to extort money without earning it, the hustling activity of a certain class of attorneys—all conduce to a state of affairs that is anything but satisfactory to the better class of the community."

A large number of the state societies are conducting their defense upon lines very similar to our own. In a few states the committee is appointed by the council, in others the secretary takes charge of the matter; in one or two it is placed in the hands of the president. In one state the president, president-elect, secretary and treasurer administer the affairs of defense. New York handles this matter in about as simple a manner as any state in the Union. There the members communicate directly with the secretary, who obtains all data in the case, immediately presenting the same to their attorney who assumes full charge. In New York the society attorney looks after the details, traveling from one part of the state to another, as needed. California handles medical defense in a little more complicated manner, by the interposition of a Board of Control.

The data received up to the present time is of such a fragmentary character that we are not able to make complete comparison of the work done in our own state with that elsewhere. We find that the cost varies from 50 cents per capita in Pennsylvania to \$10 per capita in Washington. We are unable to explain this apparent discrepancy in the cost, but only hazard a guess. It may be partly due to the fact that

in the state of Pennsylvania there is not now in force a workmen's compensation act, and that in the state of Washington there is a most rigid one, which protects the employer and leaves the doctor open to the attack of personal injury attorneys. We also find that in all the states quite a large percentage of the physicians, in addition to the defense furnished by the state, are carrying indemnity insurance of one kind or another. In the state of Washington reports show that the indemnity companies are withdrawing and cancelling their protection, thus leaving the defense to fall entirely in the hands of the state society. Indeed, we have just been informed that the Maryland Casualty Company has quit writing physicians' defense policies.

Michigan was the only state that furnished us with a tabulation of cases. This report shows 122 cases handled in the last five years. The cost of carrying this volume of business is rather indefinitely given.

New York reports show their aggregate annual expenditures have increased from \$3,000 to \$6,500 within the past five years, with the probability that another year will see further increase; this is in spite of apparently a very careful administration of affairs.

Your committee feels that of necessity this report is very meagre and incomplete—a mere scratching of the surface. But since the question of mutual protection is one of paramount interest it feels that this report is merely one of progress and that the survey should be continued.

Respectfully submitted,

I might say just a little further that with the exception of New York and possibly Maryland, the reports indicate that the eastern and southern states are not having near the number of malpractice cases against physicians that we meet with in the central and western states. Massachusetts, for instance, in their report to us seem to think that they are doing a wonderful business; that they have extremely good business acumen, and I find that they have had fourteen cases in five years. We have that many in two years sometimes. There are a few states, Missouri particularly, that do not furnish nearly the defense that we do. They furnish advice until the matter comes up for trial; from then on the doctor has to go it alone. If they can kill it off without coming to trial they do so.

I have the report of the medico-legal committee if you care to have it.

MEDICO-LEGAL COMMITTEE REPORT

Your committee begs leave to report the following:

Within the past year the executive committee has had three business meetings. At one of these all the members of the executive committee were present. A second meeting last February was a joint meeting with the sub-committee of the council and the committee

on revision of the constitution and by-laws. The third session yesterday was also a joint meeting.

When your committee took hold of this work it found practically no working rules. It discovered very shortly that it was called upon to O. K. bills for cases of which there was no record. It also found it was called upon for help after cases were actually on trial. Some of these were being handled by attorneys, who were not familiar with malpractice defense, and had not prepared their cases sufficiently. In analyzing the cases before us we find that not all are surgical. One case is purely medical, the doctor being accused of giving 15 minims of *Syr. ferri iodidi*, causing a permanent chronic gastritis; another for post mortem without consent; another for unduly exposing the patient. Two cases were for mistaken diagnosis and because of failure to operate. A number of obstetrical cases are listed, one of these claiming *ophthalmia neonatorum*; another one in which a 17-lb. baby was born and consequent cervical and perineal tears.

The committee notes the following facts. Malpractice suits are on a rapid increase and not only in Illinois but in all other states. For this reason it behooves the whole Society to co-operate in keeping the bills of expense as low as possible with proper efficiency.

The committee calls the attention of the Society to Article IX, section VI of the revised by-laws. We wish to discourage the practice of rushing to your lawyer friend the moment a suit is threatened or filed, because he may be a very good lawyer in many cases, but absolutely worthless as a medical defense attorney. The committee feels that with the present able general counsel to advise we are able to choose more wisely the local counsel.

(Cite Rock Island Case.)

It is the opinion of the committee that before long the per capita of one dollar will necessarily have to be raised.

Your committee has handled during the past year seventy cases. Of these twenty-five have been permanently disposed of and forty-five are pending. The cost to the society has been a little more than \$6,000.

Respectfully submitted.

I have here a letter that a doctor asked me to read. We have just finished a suit in one of our counties in the western part of the state in which the doctor was sued and he rushed immediately to a lawyer friend of his who perhaps socially was all right, but dilly dallied along with the case until it came up for trial. No report was made to the medical defense committee at all; we knew absolutely nothing about it until we got a long-distance telephone message from the councilor of that district. * * * I have the letter that the general counsel has written me con-

cerning the bill that was rendered by the first attorney.

CHICAGO, ILL., May 11, 1915.

Dr. C. B. King, 2348 Jackson Blvd.,
Chicago.

Re: *Bredar vs. Ludwig*.

Dear Doctor:

I enclose herewith letter and expense bill in the total of \$130.95. I have had considerable correspondence with Attorney in this matter and have also communicated with Dr. at Moline. Attorney was originally employed by Dr., but your former counsel had full knowledge of this and corresponded with in such a way as to lead him to believe that he was the representative of the Society in the matter.

There was some correspondence to the effect that Huber should perhaps not be retained in the case, but he was retained. The case was first called to my attention when it was subject to trial in a few days, and it then seemed impolitic to discharge the attorney who was already in the case. Neither did it seem advisable to continue with this attorney, to whom our local representatives felt the case should not have been originally intrusted. I felt throughout that the bill of Attorney should be paid by Dr. and we should pay the bill of Jackson, Hurst & Stafford, who were employed by me to try the case, but Dr. has not paid the bill and apparently evinces no intention so to do.

This is a typical case of a useless expense incurred by letting a physician employ his own attorney and then not taking prompt steps to remedy it, but letting the matter drift on. Since I have been in charge of your cases I have so far as possible adopted the policy of making my own selection of attorneys, requiring the physician to abide by our selection if he wishes us to handle the case.

I am inclined to the belief that Attorney has probably a legal claim on this Society for the amount of his fees, which are reasonable for the time devoted to the case and the fact that the Society will have a double bill to pay is due to a defective system of handling of cases which is now remedied except as to old hang-overs.

I have had extensive communication with Dr. seeking to have this bill paid by Dr., with no result. Attorney insists on having his bill paid and I present it herewith.

Respectfully,

ROBERT J. FOLONIE.

This letter was read at the last council meeting. The general counsel advised us that there was no possible way of getting out of it; that he would bring legal action against the society and collect the bill, so rather than have any trouble about it, the council this morning in their meeting voted to pay his bill.

Mr. Chairman, I would like to move the unani-

mous invitation of the House of Delegates to have Mr. Folonie speak to us a few moments on medical defense.

Motion prevailed.

The President: We will be glad to hear from Mr. Folonie.

Mr. Folonie: Mr. President and Members of the House of Delegates: During the past two years, or a little less, I have had the honor to represent the society in your legal matters. We have been successful in handling the medico-legal cases to this extent, that no case which has been handled exclusively by the society has been lost. They have all been won. (Applause.)

There have been a number of cases in which there have been judgments against doctors. Those have been cases handled by various insurance companies, where we have rendered some assistance, but not those in which we have had exclusive charge.

I am sorry to say that the basis of the malpractice suits that have come to my notice, and they have been many, have had their genesis to a very large extent, in the jealousies existing among physicians, and I have made it a special endeavor to allay that feeling by making several trips to local societies and counties, and in one place in particular I spent some three or four days visiting every doctor in the community and allaying the baseless condition that existed from a mutual suspicion of mistrust.

The limited time in which I feel I am warranted in addressing you is such that I do not deem it proper to go to any great extent into the defense of malpractice cases, except to say that as another ground on which these cases in a large part rest, is ignorance; some time the ignorance of the attending physician; much more often ignorance of the patients and of lawyers. That ignorance is so extreme that it is almost unbelievable to one in coming in contact with it. Typical of the extreme ignorance existing on such matters is the case in court some time ago. A woman claimed she was neglected from the moment she entered the hospital; she was allowed to suffer with nobody coming near her; bells were out of order; she could not call nurses; no doctors came near her; she was left entirely alone. One of the first questions propounded to this woman after she had finished her direct examination was, "Well, on this first day isn't it a

fact that you had an enema?" Her lawyer rose and said: "If the Court please, I object. Insulting this woman who has come in here with an honest lawsuit; accusing her of having such a frightful disease. She never had it." (Applause.) Just a little example of the sort of thing with which we come in contact constantly. And even some of the jurors were better informed than the lawyer, and there was laughter about the court room among some who were better informed.

The cost of defending cases in this state has mounted during the last year, due to a number of causes. One is due to the number of cases, which in turn is in part due to the Workmen's Compensation Act, which has been a prey for lawyers who have no source of income except damage suits, where formerly they could be a little more choice.

Another reason for the increased expense is that we have adopted a policy of disposing of the cases, trying them as rapidly as possible and not that of putting off the evil day and putting off the cases year after year, which always means an added expense in carrying this on, aside from the trials.

One source of waste has been mentioned by the chairman of the committee, Dr. King, and that is the payment of double charges, where the physician himself selected a lawyer. He was found to be not the proper person to try the case. Another lawyer would be employed. Then it would be found difficult or impossible to discharge the first lawyer. Then you had two sets of lawyers. And then if, as occasionally happens, the general counsel went, you had three lawyers in the field, and that waste has been eliminated by a system of education, by declining to accede to selections by the local attorney, always, however, taking his choice into account and giving him the attorney of his choice if he was found to be a competent and proper person to handle the case. During only the last week I had the matter forcibly brought before me in the case where a physician designated some lawyer he wanted to handle a case. They stated they would not handle the case for less than a hundred dollars a day for preparation and trial. They were apparently the most competent lawyers in that particular locality, but their charges were such that if it were generally adopted or permitted it would simply bankrupt the society. The

doctor was advised that if he insisted upon his choice we would have to leave him to pay the bills, but that we could select other counsel from an adjoining county, equally qualified, and try the case for much less, and try it just as efficiently, and the matter was handled to the entire satisfaction of the physician, and in the economical administration.

I have had a very pleasurable year and I have had the most efficient aid. Dr. King has devoted a great deal of his time to the work of the committee, and I deem it a pleasure as well as an honor to have had the opportunity to meet you personally. (Applause.)

Report of committee approved as read.

Motion that the committee on medical survey be continued. Motion prevailed.

Dr. Robinson: *Mr. President and Gentlemen:* Under the head of medical legislation, I have been instructed to bring before your attention the action taken by Madison County in the matter of the Federal Anti-narcotic Bill. The sentiment in my district is unanimously against the bill as it now stands. We are not opposed to the object to be attained by that bill, but we are opposed to the way in which the bill is framed and the way in which it is worked. The council has given directions, both in resolutions and other instructions, that the matter be brought before your House, and it seems to be the general sentiment of our members that the best way the matter could be brought before you is to read the resolutions adopted by Madison County and lay them before you, and as a representative of that county to ask you to take action on the resolutions one way or the other. They earnestly desire, if possible that you endorse them. We were anxious to have you understand that we do not oppose the general purpose of that law, but we feel that the law is an unfair, unwise and unjust law as it stands as to the medical profession, and if we can gain your support we can probably in time bring about certain amendments to the law, which is now very onerous to the profession. I now have a copy of the law here, and if there is no objection I would like to read the resolutions to the society and ask for their action on the same.

The President: Were those resolutions published in the JOURNAL?

Dr. Robinson: Yes.

The President: Perhaps the members may have read it there.

Dr. Robinson: It is simply before the House of Delegates. If you would like to have them read I would like to do so, because some of the newspapers have taken the matter up and have characterized our action as one of peculiar ugliness on the part of the profession. In those resolutions the reasons are fully stated as to why we have taken such action.

A Voice: Read them.

Dr. Robinson: I will try and get through as rapidly as possible:

(The resolutions were published in the May JOURNAL, page 407.)

Dr. Hall: I move you that the resolutions as offered by the Madison County Society be endorsed and that our secretary be instructed to write each member of congress and our senators, notifying them of our action.

Motion seconded.

Dr. Beck: Mr. President, I think that the resolution now meets with the endorsement of the majority of the members of the House of Delegates, but it seems to me that it is entirely too important a matter to put ourselves on record on without very mature consideration, and I think that it would be wise to postpone the consideration of that resolution until our next meeting. It must be understood—and it is the same objection that I raised to a gentleman who introduced the resolution in regard to the Medical Practice Act—no bill can be introduced in the Illinois State Legislature at this time. At this late date—and that is one of the objections I had in regard to the Medical Practice Act—at this late date no bill can be introduced without the unanimous consent, and I think that a resolution of this kind—it cannot be considered by Congress for six months—ought to be very seriously considered by the Illinois State Medical Society before its adoption.

I must say that I am in sympathy with a great deal that the resolution contains, but I would rather see this resolution referred to the Council of the State Medical Society. They are the State Medical Society in the intervals between meetings, and I believe the council ought to take that into consideration before we put ourselves on record. I will not oppose anything in the resolution, except that it covers a great deal

of ground for us to take action on on the spur of the moment.

The President: Do I understand that you make a motion that this matter be referred to the council as a committee?

Dr. Beck: I do not make that as a motion, because if the House of Delegates want to adopt that, of course I don't want to put any obstruction in the way, but I do not believe it would be exactly wise at this time.

The President: Do I understand you wish to postpone the consideration of this matter?

Dr. Beck: I do not offer a motion.

Dr. Stubbs: Mr. President, I move you that the resolution be referred to the committee on medical legislation.

Dr. Center: Mr. President, inasmuch as Dr. Stubbs' motion is not seconded, I move you as an amendment to the original motion that the chair appoint a committee to submit suitable resolutions on this point at the next meeting of the House of Delegates.

Motion seconded.

Dr. Ensign: Mr. President, it seems to me that we have a body whose business it is to look into these matters and I move to substitute the Council of the State Medical Society to take charge of this matter and report back.

Motion prevailed.

The President: Is a delegate from Henderson County present who has a communication to present? (No response.)

Dr. E. C. Franing: Mr. President, I desire to offer the following resolution and move its adoption:

WHEREAS, The State of Illinois is deficient in statistics and in methods of acquiring statistics and combating the cancer problem, therefore be it

Resolved, That the President of the Illinois State Medical Society appoint five of its members to act as a committee known as the Illinois State Cancer Commission, one member to be appointed for one year, one for two years, one for three years, one for four years and one for five years, respectively. The President of the Illinois State Medical Society shall also appoint each ensuing year one new member on the commission, whose term of office shall be five years.

The object of this commission shall be to gather statistics or any data pertaining to, or to help in any way toward the solution of the

cancer problem; also to find ways or means by which the public may be educated along prevention and cure of this disease.

Introduced by Dr. E. C. Franing, Galesburg, delegate from Knox County Medical Society.

Dated May 18, 1915.

Dr. Gilmore: I move that the entire matter be postponed until Thursday morning.

Dr. Ensign: It seems to me this is an important matter, but that it does not properly come under this section. I move as a substitute that this matter be referred to the section on practice.

Motion prevailed.

Dr. Gilmore: I move that the House of Delegates do now adjourn until nine o'clock, Thursday morning.

Whereupon the House of Delegates adjourned until nine o'clock A. M., Thursday, May 20, 1915.

Thursday, May 20, 1915, 9:00 o'clock A. M.

House of Delegates met pursuant to adjournment.

The president in the chair.

The roll called by the secretary.

The minutes of the last meeting were read and approved.

Whereupon the House of Delegates proceeded upon the order of election of officers.

Dr. Arp: I wish to make a motion that there be no nominating speeches, owing to the fact that we have a great deal of matter to look over, and the revising of the by-laws, and a good many of the physicians would like to get home.

Motion prevailed.

The following officers were elected:

Dr. W. L. Noble, president.

Dr. F. S. O'Hara, first vice-president.

Dr. H. P. Bierne, second vice-president.

Dr. A. J. Markley, treasurer.

Dr. W. H. Gilmore, secretary.

THE COUNCIL.

Dr. C. D. Pence, Chicago, 3rd District.

Dr. C. D. Center, Quincy, 6th District.

Dr. F. C. Sibley, Carmi, 9th District.

PUBLIC POLICY COMMITTEE.

Dr. A. M. Harvey, Cook County.

Dr. J. A. Poling, Freeport.

Dr. H. N. Rafferty, Robinson.

MEDICAL LEGISLATIVE COMMITTEE.

Dr. L. C. Taylor, Springfield.

Dr. H. F. Bennett, Litchfield.

Dr. N. M. Eberhardt, Chicago.

MEDICAL EDUCATIONAL COMMITTEE.

Dr. A. M. Corwin, Chicago (one member elected).

DELEGATES TO AMERICAN MEDICAL ASSOCIATION.

Dr. Charles J. Whalen, Cook County.

Dr. C. E. Humiston, Cook County.

Dr. Pfeifenberger, Elgin.

ALTERNATE DELEGATES TO A. M. A.

Dr. R. R. Ferguson, Chicago.

Dr. A. E. Bertling, Cook Co.

Dr. C. S. Andrus, Winnebago.

Dr. Z. V. Kimball, Hillsboro.

Dr. George Bell, Cook County.

Dr. Whalen: Mr. President, I move you that we now proceed to fix the place of the next meeting. Motion seconded, and the House proceeded upon the selection for the next place of meeting.

Dr. Cantrell: *Mr. Chairman and Gentlemen of the House of Delegates:* The delegates who were to arrive on the ten o'clock train are not here. The McLean County Medical Society voted unanimously to extend an invitation to the Illinois State Medical Society to meet in Bloomington in 1916. We have done this advisedly, we have looked over the matter and know we are able to care for you, entertain you and give you as good a time as possible. We of the medical profession extend this invitation. The secretary of the commercial society was to be here on this same train at ten o'clock to assure you that the commercial club of Bloomington was back of it. They are extending a hearty invitation. I did not suppose this matter would come up until later and I thought they would be here in plenty of time, so if you will allow me to voice their sentiments I will assure you the medical profession is extending this invitation; the commercial club is surely a live organization and is back of this invitation; in fact, the citizens of Bloomington invite you to our city in 1916. (Applause.)

The President: The name of Bloomington has been presented by Dr. Cantrell of Bloomington.

Dr. Johnson: I wish to extend an invitation for the next meeting to be at Champaign. As you all know, Champaign and Urbana are twin cities; they are one. This society has never met there but once, thirty-nine years ago. It has met at Bloomington five times. Why meet at

Bloomington six times and at Champaign only once? The great University of Illinois is at Champaign—your university. Come and see it. Champaign County invites you. The largest agricultural county; one of the largest in the state; the wealthiest agricultural county; one of the three wealthiest agricultural counties in the state. The city of the great University of Illinois, come and see it. (Applause.)

The President: The gentleman presents the claims of Champaign as the place of next meeting. Are there any further suggestions?

Dr. Johnson: The criticism has been made that we can not take care of them. We can take care of them. We have two first-class hotels that can take care of six hundred. Urbana can take care of at least one hundred and fifty. Many of us have friends in the university and they will be taken care of. There are seven hundred and twenty registered here. There has not been six hundred here at one time. We can take care of you. We have got good food; we have got nice women; we have got good beds; come and see us. (Applause.)

The President: Voicing my own personal feeling in the matter I should say that the last speech of Dr. Johnson settled this case.

Dr. Arp: Mr. President, I move that we proceed with the ballot as to where we shall have our next meeting.

Mr. Ferguson: Inasmuch as the commercial association from Bloomington and the delegate from there are on their way down we certainly should hear from them, because they perhaps have better looking women than they have at Champaign.

Dr. Johnson: I doubt it.

A Voice: I second the first motion that we proceed to ballot.

Dr. Eberhardt: I don't know whether I am right or not, but I want to state to the House of Delegates that when the subject of a place for the meeting this year was discussed on account of the strong bid made by Springfield at that time, Bloomington very kindly and magnanimously withdrew their claims with the tacit understanding that the next time the meeting would go to Bloomington. It seems to me that it would be a breach of faith on the part of this House of Delegates to do other than vote for Bloomington.

Dr. Ensign: *Mr. President and Gentlemen:* I wish to make a few remarks for Champaign. If you will take the history of the society for fifty-five years you will find it has met in Bloomington for five times during the history of the society and only once, as the gentleman remarked, at Urbana or in that vicinity, but in the eastern part, with the exception of Chicago—in the eastern and down state this society has met only three times in its history—once at Urbana. I want to call your attention to the history of the state society, and it is only fair that we divide this. I prefer to go to Bloomington, personally; it is nearer for me to get there; but when I look over the map of the state I see all these sixty-five years we have neglected that territory with our meetings, except three instances—this great east down-state part of the state—and it is my own personal preference to advocate the invitation from Champaign, and I want to make more emphatic the fact that our State University is there. Our legislature makes extensive appropriations for the conduct of its business, and I believe that by meeting there we can aid our institution at Champaign by our encouragement and presence on the ground. (Applause.)

The President: While it is true that a motion prevailed in advance excluding nominating speeches, I feel it is but right and fair to all parties that when this matter is before the House to give at least a fair opportunity for discussion, so that if any other member present desires to make any remarks in regard to the next meeting place, I would be glad to hear from him. Are you ready to proceed with the ballot? The motion before the House is that the House of Delegates now proceed to ballot as between Bloomington and Champaign.

Motion prevailed. Ballot taken.

Dr. Robertson: If I am not out of order, I want to make a motion in regard to future medical society meetings.

The President: At this juncture it is out of order, but we will give you a chance later to be heard. It is in order now to appoint the tellers.

As tellers I will appoint Dr. Simpson of Clinton County and Dr. Eberhardt of Cook. Gentlemen, prepare your ballots.

Dr. Burkhardt: Mr. President, am I in order to introduce a resolution at this time?

The President: Spring it and we will decide it.

Dr. Burkhardt: I will proceed to spring it then.

WHEREAS, The organization of the American College of Surgeons is to be deplored as violating the fundamental democratic principles upon which the American Medical Association is founded, and

WHEREAS, The methods used in the promotion of the said American College of Surgeons have resulted in casting discredit in the mind of the public upon a large number of the reputable members of our profession; therefore be it

Resolved, That we instruct our delegates to the House of Delegates of the A. M. A. to use every honorable means to prevent any recognition of the said American College of Surgeons in the affairs of the A. M. A.

Resolution adopted.

Dr. Gilmore: Mr. Chairman, I have the result of the balloting on the next meeting place. The total is 84 votes east. Bloomington receives 30 votes and Champaign receives 54.

The President: Champaign having received a majority of the votes east, is hereby declared to be the place for the next meeting.

The next thing is to fix the per capita tax for the coming year.

Dr. Eberhardt: Mr. President, I move you that the per capita tax for the ensuing year be \$2.50.

Motion prevailed.

The President: The next in order is the consideration of the Constitution and By-Laws. What is your pleasure?

Dr. Krone: Mr. President, I move you that in the consideration of the committee on Constitution and By-Laws that we consider the Constitution section by section; that each section be read and voted upon.

Motion seconded. Motion prevailed.

Whereupon the consideration of the Constitution and By-Laws was taken up, discussed section by section and approved as a whole.

Dr. Corwin: Mr. President, the committee on medical education has put in its report, as usual, and it is in the hands of the delegates. Now unless somebody wants me to read it, and unless there is an objection, as it is late, I move that this committee's report be accepted. It is the unanimous report of this committee and I move that its recommendations be adopted.

Motion seconded. Motion prevailed.

REPORT OF THE COMMITTEE ON MEDICAL EDUCATION.

Mr. Chairman and Gentlemen of the House of Delegates:—Your Committee on Medical Education submits the following report:

Upon request of the Chairman, the Secretary of the State Board of Health kindly sent us the following communication, which we quote substantially in full, as it gives up-to-date information with regard to the work of the Board and its requirements under the law bearing upon medical education:

Arthur M. Corwin, M. D., Chairman,
Committee on Medical Education,

Illinois State Medical Society, Chicago.

My Dear Doctor Corwin:—Your favor of May 8th is before me and I will endeavor to give you, as briefly as possible, a resume of the work of the Board during the past year in the directions indicated by you.

1. I will call your attention to the Schedule of Minimum Requirements for Medical Colleges in "Good Standing" with the Illinois State Board of Health, a copy of which is enclosed. (In force September 1, 1914.)

The principal points to be noted in this Schedule are the following:

(a) A five year medical course is made obligatory.

(b) *Evidence of Preliminary Education:* The only evidence now accepted is a diploma from an accredited high school (or better), such a diploma to represent a course of studies in the subjects set forth in the schedule approved by the Board, a copy of which is attached, or a certificate of successful examination conducted by the State Superintendent of Public Instruction of the State of Illinois, or, by an officer of another state having like authority under the statutes.

(c) Your attention is particularly invited to the clause under "Condition of Admission to Lecture Courses," page 15, in which it is stipulated that no "person engaged by or beholden to a medical college or institution" * * * shall give examination to candidates for matriculation.

(d) No certificates of examination will be accepted, when signed by the Superintendent of Public Instruction of other States, *when such examinations have been held in Illinois, outside of the jurisdiction of the officer conducting same.*

(This clause is based upon an opinion of the Attorney General of the State of Illinois to the effect that * * * "The Supreme Court held that official power does not necessarily attend the person of the officer, but must be exercised within the territory where he is an officer.")

(e) Certificates of examination signed by deputy superintendents of Public Instruction of Illinois are no longer acceptable to the Board. Such certificates which have been issued by Deputy Examiners in Illinois are being taken up by the State Superintendent and in lieu thereof new certificates bearing the signature of the State Superintendent himself will be issued—when the deputy's certificate is found to be genuine.

2. One of the most acceptable events of the past year is the development of a closer co-operation between the State Superintendent of Public Instruction and the State Board of Health. The schedule of subjects embraced in the State Superintendent's examination now conforms with the requirements of the Illinois State Board of Health, and, moreover, the State Superintendent has assigned from time to time an expert to assist in the examination of credentials of preliminary education filed in this office.

Coming back to the Schedule of Minimum Requirements; probably the most important new demand is that requiring the filing of evidence of preliminary education of all matriculants in medical colleges at the time of their entrance in college.

3. Since January 1, 1915, the Committee on College Inspection of the Board has inspected ten medical schools in Chicago and St. Louis; all of these schools were inspected once; one school was inspected four times, and one three times.

The recognition was withdrawn from one college until such time as it remedied the conditions to which objections were taken by the Committee of the Board.

4. In regard to the prosecution of non-licensed practitioners, I will say that it should be remembered that under the statutes the Board is not permitted to expend any of its appropriation for attorney's fees, and that therefore—outside of the city of Chicago—where the Board maintains a salaried attorney, very little is done in the way of prosecution. Prosecutions in the country districts are referred to the State's Attorneys, but it rests with the complaining parties to furnish the evidence, and most persons feel that they have discharged their entire duty when reporting irregular practice to the State Board of Health.

During the year from April 1, 1914, to March 31, 1915, several hundred complaints were received in the office of the Board, all of which were investigated and warning notices were sent. Fifty-one (51) authorizations for prosecution were issued to the Attorney of the Board in Chicago, and, during the same period, twelve authorizations were issued for violators outside of Chicago.

Of the cases in which suit was brought, fifteen are still pending in the courts in Chicago, and outside of Chicago. Only two suits were decided in favor of the defendants. In four instances it was found that the defendants had left the State and the suits were dropped. One defendant died and two went insane, one of them now being an inmate of a State institution for the insane. On account of unusual and extenuating circumstances ascertained upon investigation, five cases were dismissed on payment of costs. In twenty-one cases judgments were obtained and the fines were paid. In three cases on failure to pay judgment, defendants were committed to jail.

In one case, in Peoria County, it was ascertained that a layman was practicing medicine by using the name and certificate of a regularly licensed physician of the Board. This offender was prosecuted on the charge of forgery and was compelled to pay a fine of

\$500.00 and to surrender the certificate in his possession.

The violations for which prosecution has been instituted have consisted of the following: Laymen posing as medical "specialists" or as physicians; druggists practicing medicine without a license; persons practicing in the name of a physician duly licensed; so-called "other practitioners" and licensed by the Board as such, employing medicines in their practice.

In one case, in which the violator was practicing medicine and entirely unlicensed, it was found that this offender not only had a large practice, but was treating several cases in various Chicago hospitals.

* * * * *

If there is anything further I might do, please call on me.

Very truly yours,

C. ST. CLAIR DRAKE,
Secretary.

The real public health work which the statutes impose upon the State Board of Health is being accomplished along the lines of efficiency as rapidly as the present limited appropriation will permit. It is gratifying to note in this connection that while the total appropriation asked for in the Budget of the State Board of Health will not be granted, there will be an increase over that of the last biennial period. The State administration realizes the importance of its Public Health Department, but is unable to fully provide funds for the immediate future demands.

Your Committee wishes to call attention to the inequitable provision in the Illinois statutes which exacts certain requirements of preliminary education and prescribed medical courses of applicants for medical licensure, while practitioners of other systems of healing and midwives are required only to pass an examination without preliminary educational requirements. It certainly looks like class legislation and legislation which does not conserve the health and lives of the people. *If the State Board has power under the present Practice Act, and we think that it has such power, to exact similar educational requirements of other practitioners and midwives, we hereby recommend that this be done, to the end that all licensures shall be placed upon an equitable footing.*

As to the relation of medical education in Illinois and the State Boards of the several States and Territories, the following statements, based upon the figures of the last report of the Council on Medical Education of the American Medical Association, are apropos:

Out of the 102 medical colleges in the whole country, there are only 33 whose students are in good standing for licensure by all State Boards; 69 are, therefore, not in good standing. So that we are still far from any sort of agreement amongst the various State and Territorial Boards upon this matter. Such uniformity can hardly be attained as a basis for wide reciprocity until the college requirements are better standardized.

Of Illinois' eight medical colleges, three are acceptable to all the State Boards. The student out-

put from these three formed nearly half the total output of Chicago medical colleges for 1914; two schools are not in good standing with seventeen Boards; one is not *persona grata* with twelve State Boards; and the other two colleges are not satisfactory to the Boards of thirty-two States.

Of all graduates in 1914 from all colleges of the United States who were examined by State Boards, the average per cent of failures was 12.5 per cent. The average per cent of failure for 1914 graduates from the eight medical colleges of Illinois was 13 per cent, so that our State showing is $\frac{1}{2}$ per cent below the average of college excellence. But, as we have noticed, of the total number of graduates from Illinois medical colleges, 525 in 1914, nearly half, came from three colleges, with only 5.5 per cent of failures before Boards. These figures are encouraging, particularly in the light of the vast improvement made during the last few years.

Post-Graduate Situation. Organized medicine represented by the Chicago Medical Society, through its Committee on Medical Education, on June 12, 1914, took up the subject of postgraduate education, and formulated a plan for a Bureau by which all clinical teachers, with their places, days and hours, are to be daily bulletined at the office of the Society in the Marshall Field Annex Building. The character of the clinics is also to be indicated, as far as possible. By this means visiting physicians, or those in any part of the country desiring post-graduate instruction, can, by keeping in touch with this Bureau, select the work they most desire and brush up on matters of greatest interest to them.

This Committee, under the leadership of Dr. C. P. Caldwell, chairman; Dr. Martin M. Ritter, secretary, has prosecuted the work energetically. Meetings at which representatives of the post-graduate and undergraduate schools, as well as representatives of many of the hospitals of the city were present, were held. It was decided that the propaganda for making Chicago the medical center of this country should be vigorously continued by the Chicago Medical Society. The Committee since then has worked on these lines, and has furnished to those wishing information the desired data, and by a public campaign through medical journals and otherwise has spread the news.

"The Chicago Medical Society was the logical body to which prospective visitors could apply, and this Committee having placed itself at the disposal of the medical public, inquiries from all over the country became numerous, and a large volume of correspondence is on file."

The plan of this Bureau, endorsed by the Council of the Society, has appeared in various issues of the Bulletin of the Chicago Medical Society during the year, and at an early date reliable information will be brought to the profession of the country.

A plan for co-ordinating the clinical work of Chicago through a Bureau was later announced by the "Graduate Medical School of Chicago," so-called. It

simply aims to duplicate the work of the Chicago Medical Society Committee, above referred to.

Out of the various efforts to solve the post-graduate problem, it is apparent that the various private interests, corporate and individual, which have always controlled that field in Chicago, are more inclined to co-operate than ever before. It is only by an evolutionary process that complete co-operation can be attained. It is fairly apparent that the final organization of post-graduate work in Chicago must rely for its success upon the support of organized medicine rather than upon the fiat of a few individuals.

More and more it is becoming the function of the State to train men for public health and sanitary service. In the opinion of the present Executive Officer of the State Board of Health, the time is ripe for the establishment of a training school for health officers, and the need is urgent for such an undertaking. The field force of the State and Municipal Health Boards must necessarily be the nucleus of the teaching body in such a training school, because the practical clinical experience required can only be obtained in the field. It is safe to say that organized medicine, through the House of Delegates of the Illinois State Society, is in hearty accord with this suggestion and hereby expresses its approval.

Respectfully submitted,

Signed,

ARTHUR M. CORWIN, Chicago, Chairman;

F. BUCKMASTER, Effingham;

MARTIN M. RITTER, Chicago.

Dr. Cooley: I want to take this occasion to thank the members of this House of Delegates for their fairness with this committee; I want to thank the members of this committee for their fairness in this matter. Every move has been made in good faith and good faith has been kept. I do not want to lose this opportunity to say that I think this body of men has demonstrated the fact that they are alive to the situation and realize the importance of this matter. (Applause.)

The President: I wish to express my gratification to this House of Delegates for bearing with me in this matter of voting on each one of these sections individually. I feel that this was an important matter, and we could well afford to devote a little time, and I sincerely thank you for being patient with me while we went over it.

Dr. Gilmore: We have six officers of this society to elect, those of the medico-legal committee, and after they are elected I want to remind this committee that it must elect a chairman at this meeting directly.

The President: We will proceed to elect six members of the medico-legal committee.

Whereupon the following names were submitted and voted upon:

C. B. King, Chicago. 3 years.

T. D. Cantrell, Bloomington. 3 years.

W. O. Krohn, Chicago. 2 years.

George Stacey, Jacksonville. 2 years.

D. R. MacMartin, Chicago. 1 year.

Andy Hall, Mt. Vernon. 1 year.

Of this committee C. B. King has been elected chairman and T. D. Cantrell secretary.

The President: The next in order will be the report of the committee on public policy, by Dr. Gilmore.

Dr. Gilmore: *Mr. President and Gentlemen of the House of Delegates of the Illinois State Medical Society:*

With the approval of the president of the society and the councilors, your committee on public policy undertook, several months ago, to arrange health and safety meetings for the general public preceding and during the annual meeting of the Illinois State Medical Society.

With the co-operation of many of the churches in Springfield we were enabled to furnish speakers from among the visiting members of the Illinois State Medical Society to the churches on the Sunday preceding the annual session. On this occasion the different speakers addressed the congregations on phases of health and disease of particular interest to the laity.

Arrangements were also made with the superintendents of the public and parochial schools for a "safety first" day. Four sessions were held during the day, at which times all of the pupils of the public and parochial schools were instructed and entertained by talks and moving pictures explaining the need of public and industrial safety. The speakers at these sessions were also members of the Illinois State Medical Society experienced in accident prevention work. The evening session of the "safety first" day was arranged for the general public and especially those engaged in industrial pursuits.

Through the co-operation of the Woman's Club of Springfield a public health meeting for women only was held, the speaker on this occasion being one of the visiting women members of our society.

Your public policy committee are under obligations to the pastors of those churches that co-operated for the health Sunday; to the superintendent of the public and parochial schools for co-operating in the "safety first" day, and to the management of the street railways of Springfield for transporting, free of charge, the school children to and from the "safety first" meetings.

We also wish to thank the Hon. Peter M. Hoffman, coroner of Cook county and originator of the Public

Safety Commission of Chicago and Cook county, for coming to Springfield and delivering the principal address at the evening session of the "safety first" day.

We are under obligations to Mr. H. L. Brownell, chairman of the public safety committee of the Illinois Manufacturers' Association, for coming to Springfield and showing his moving pictures at all of the sessions on "safety first" day as a representative of the Illinois Manufacturers' Association.

Dr. Blankmeyer, chairman of the local committee on arrangements, and Mrs. George Thomas Palmer, chairman of the woman's entertainment committee, and Dr. C. St. Clair Drake, secretary of the Illinois State Board of Health, also rendered valuable assistance in making these meetings a success.

The visiting members of the Illinois State Medical Society who spoke at the different meetings and by sacrifice of time and money made the entire program a success are as follows:

Dr. A. M. Corwin	Dr. H. W. Mock
Dr. Effa V. Davis	Dr. J. W. McDonald
Dr. S. C. Dickerson	Dr. A. A. O'Neill
Dr. C. St. Clair Drake	Dr. Martin Ritter
Dr. G. S. Edmondson	Dr. C. G. Roberts
Dr. W. A. Evans	Dr. J. D. Robertson
Dr. Bernard Fantus	Dr. H. R. Smith
Dr. C. G. Farnum	Dr. J. C. Stubbs
Dr. W. J. Hickson	Dr. O. B. Will
Dr. W. O. Krohn	Dr. A. W. Williams
Dr. C. W. Lillie	Dr. H. J. H. Woehlek

Your committee recommends that messages for the need of conservation of human life and energy be carried direct to the people in similar meetings at future sessions of the Illinois State Medical Society.

O. B. EDMONDSON,
C. H. PARKES,
A. M. HARVEY, Chairman.

Report approved as read.

Dr. Burdick: Mr. President, I would like to offer the following resolution and move its adoption:

Resolved, That a vote of thanks be extended to Governor Dunne and his excellent family for the courtesies extended to the visiting ladies.

I move that the secretary be instructed to forward this resolution to the Governor.

Resolution unanimously adopted.

Dr. Krohn: Mr. President, I desire to offer the following resolution and move its adoption:

Whereas the members of the Illinois State Medical Society, now in Annual Session at Springfield, have during their sojourn been the recipients of many evidences of courteous consideration, not only from the individual members, but also from the Senate and House Organiza-

tions of the Forty-Ninth General Assembly; therefore, be it

Resolved, That we express our profound appreciation of the kindly consideration and numerous courtesies extended to us as individuals and as a medical organization.

Resolution unanimously adopted.

Dr. Corwin: I wish to offer the following resolution and move its adoption:

Whereas there is an immediate and urgent need for the establishment of a Sanitary Engineering Bureau in the State Board of Health for the purpose of conserving the public health, in the way of providing expert counsel and advise to all the communities of the state regarding such matters as sewage disposal, garbage waste disposal, ventilation, plumbing in schools, public buildings, etc. This House of Delegates hereby recommends that such a bureau should be established, and that the sum of ten thousand dollars (\$10,000.00) per annum be appropriated by the Forty-Ninth General Assembly for such purpose.

I would like to have a second, and then just a word in explanation.

Motion seconded.

Dr. Corwin: While the president is busy, let me say, gentlemen, that there is a law at the present time requiring the State Board of Health to do this service, to give special advice and counsel in the matters specified, but they have no machinery and no money for doing so, and this is in line with giving them what they ought to have to carry out the law.

Dr. Van Derslice: I move to send the report to the committee on medical legislation.

Dr. Corwin: May I say that this has been carefully thought over, and it is the very urgent desire of Dr. Drake, the secretary of the State Board of Health, with whom we are entirely in accord and co-operation in doing the splendid work that he is, and I believe that it is no more than a courtesy that this matter be pushed so that he may get what he wants in the way of proper appropriation for doing the work of public sanitation.

Dr. Krone: Just one question I would like to ask in regard to the resolution, because I may be in error. I understand that this work is done largely by the University of Illinois. They have asked that we propose a resolution for their water survey, and so on. I would hate to get water-

logged on two water subjects. I would just like to know if there is any complication, or any war waging, one against another?

Dr. Corwin: Dr. Drake tells me the Board is hampered, and this is simply to back up that Board and enable them to do the work that the law requires of them.

Resolution adopted.

Dr. Franing: I wish to offer a resolution which I offered the other day and which was turned over to the committee on Theory and Practice on which, I believe, there is no committee.

I think it is a very much needed commission, because a great many of the eastern states are appointing this commission and it is doing good work along the lines of statistics, and in some of the states in the east they are adopting the idea of educating the people along the lines of the origin and prevention of cancer, and they are doing good work, and our County Society has appointed a commission of three, and it is the idea of this commission to have the State Organization to urge every county to form a commission so that the State Society may work in connection with those companion societies and to work in connection with the American Cancer Commission that is appointed by the American Medical Association, and I hope that you will adopt it. I move its adoption.

Resolution adopted.

Dr. Gilmore: Mr. Chairman, I move that the appointing of this committee be postponed and that the president at this time advise the secretary of his appointments some time in the near future.

The President: Is there anything further?

Dr. Nelson: I wish to say that two years ago in the city of Peoria, at the meeting of the House of Delegates, in the matter of selecting a president for the Illinois State Medical Society they digressed a little from the usual method of doing business in that respect, and instead of sending a man who has gained a wide reputation in some special line in the practice of medicine, and also in selecting a man from the city, they elected a man who you might say has been the busy country practitioner. I believe it has demonstrated the wisdom of that choice.

Our present president, Dr. Brittin, has been tireless in his efforts to promote the interests of

the Illinois State Medical Society. He has made good use of his time, and has covered nearly every county in the state. I believe he has covered more territory in the performance of his duties than any of his predecessors.

Dr. Brittin is rich; he don't need any money; so I am not going to make a motion to vote him any; but I believe the least this House of Delegates could do is to extend a rising vote of thanks for the services he has rendered as President of the Illinois State Medical Society, and I make a motion to that effect. (Applause.)

Motion seconded.

Motion prevailed and the House of Delegates rose in a body.

Dr. Brittin: Gentlemen, modesty forbids me to attempt to make any suitable reply that would extend to you my feeling of gratitude for this expression of your good will. I have simply endeavored to do my duty as I believed it to be. I simply say that I thank you one and all. I have done my level best, and if it was to do over again I could not break the record I have already made. (Applause.)

Dr. Hall: Mr. President, another motion I think we should not overlook. I want to introduce this resolution:

Resolved, That we express our appreciation to the Sangamon County Dramatic Club for the highly entertaining and edifying manner in which they demonstrated to us the beauties of *Twilight Sleep*. (Applause.)

Resolution unanimously adopted.

Dr. McEckron: Before we adjourn I wish to take this occasion, this opportunity to have the House of Delegates tender to the citizens of Springfield, and its properly constituted representatives, a vote of thanks for their hospitality and courtesy during our stay in the city.

Resolution unanimously adopted.

Motion to adjourn. Motion seconded.

There is a motion to adjourn.

Motion prevailed, and the House adjourned.

AUDITOR'S REPORT.

June 21, 1915.

Board of Directors,

Illinois State Medical Society,

Gentlemen: We have made an examination of the books of account and records of the Illinois State Medical Society for the year ended May 16, 1915, and present herewith our report.

The balance on hand in the general fund at May

16, 1914, amounted to \$1,680.83 and the receipts of cash, exclusive of the income from advertisements, etc., totaled \$5,164.87. The disbursements aggregated \$5,632.82, leaving a balance of \$1,212.88. After deducting the loss on the journal of \$3,322.38, the disbursements exceeded the receipts in the amount of \$2,109.50.

We present herewith a statement of the cash receipts and disbursements for the period and in this we also include the transaction of the Medico-Legal Expense Fund. This fund shows an excess of receipts over disbursements of \$11,365.62. After deducting the deficiency in the general fund, the balance in the banks at May 16, 1915, totaled \$9,256.12, all of which we verified by direct communication with the depositories as follows:

Illinois Trust & Savings Bank, Chicago.....	\$ 5.34
Farmers State Bank, Belvidere.....	3,690.78
First National Bank, Belvidere.....	5,560.00
	<hr/>
	\$9,256.12

During the period under review the income from advertisements, etc., in the JOURNAL totaled \$8,425.41, as compared with \$5,916.67 the year previous, an increase of revenue of \$2,508.74.

It will be noted also that the cost of publishing the journal has also increased. This increase, however, is mainly accounted for by the payment of \$2,005.24 covering the cost of printing for the months of February, March, April and May, 1914, which should have been charged to last year's account.

We have accepted the book figures for the year for the income from advertisements, etc., in the JOURNAL, as it would not be practical for us to verify them in the time available.

In our examination of the records we found that all disbursements were supported by canceled bank checks and vouchers on file.

The amounts received from the secretary have been verified by an examination of the records kept by that official, but we have not confirmed the amount shown on his records by communication with the parties remitting to him.

Yours very truly,

ERNST & ERNST,

Certified Public Accountants.

CASH RECEIPTS AND DISBURSEMENTS.

ILLINOIS STATE MEDICAL SOCIETY.

May 16, 1914, to May 16, 1915.

GENERAL FUND

May 16, 1914. Balance on hand.....\$ 1,680.83

RECEIPTS

W. H. Gilmore, subscriptions..... 5,164.87

\$ 6,845.70

DISBURSEMENTS

Auditing	\$ 22.50
Annual meeting expense.....	798.26
Councillor expense	866.53
A. L. Britton expense.....	511.47
E. M. Weiss, honorarium	500.00
Miscellaneous expenses	250.61
Medical legislation committee.....	240.22
Medical education	32.13
Stationery and printing	373.10
C. J. Whalen, campaign expense.....	300.00
Organization work	47.00

Salaries, stenographer	741.00
Salaries, assistant secretary.....	300.00
Salaries, secretary	600.00
Salaries, treasurer.....	50.00
	<hr/>
	5,632.82
	<hr/>
	\$ 1,212.88

JOURNAL	
Printing and postage.....	\$9,454.95
Half-tones and electros....	64.48
Office expense	289.40
H. G. and E. L. Ohls.	815.70
Editor's salary—Pence, Dr.	
C. D.	900.00
Commissions	122.16
Miscellaneous expenses	101.10
	<hr/>
	11,747.79
Less income from advertisements, etc.	8,425.41
	<hr/>
Loss on Journal	3,322.38
	<hr/>
May 16, 1915. Disbursements exceed receipts.....	\$2,109.50
MEDICO-LEGAL DEFENSE FUND	
May 16, 1914. Balance.....	\$13,994.75
RECEIPTS	
W. H. Gilmore	3,498.50
	<hr/>
	\$17,493.25

Society Proceedings

CLARK COUNTY.

Society met at courthouse Marshall, Illinois, June 10, 1915, at 2 p. m., in regular session.

Members present: Haslitt, Wilhoit, Johnson, James, Mitchell, McCullough, Duncan, L. J. Weir, Hall, Anderson, S. W. Weir, visitor; Mr. Casteel, druggist, invited guest; Dr. B. G. R. Williams of Paris, Ill.

Minutes of previous meeting were heard and approved.

Dr. Williams read an interesting paper on "Urinary Analysis in the Treatment of Nephritis," giving laboratory findings and the conditions and treatment indicated by these findings; discussed specific gravity, reaction, "all nephritides are acid in origin," billirubin, phosphates, urea, albumin, casts, etc.; suggesting that all persons should have the urine analyzed once or twice a year, that chronic nephritis might be detected in its beginning, when it is curable by regulating diet, relieving gastro-intestinal stasis, etc. The paper was well received and highly appreciated.

The general discussion and questions asked of the essayist brought out many practical points. Several interesting and obscure cases were reported by members present and discussed till a late hour.

Our delegate, Haslitt, reported the state society meeting at Springfield, which was an interesting report of a valuable meeting.

Society adjourned.

L. J. WEIR, Secretary.

COOK COUNTY.

CHICAGO MEDICAL SOCIETY.

Regular Meeting, June 2, 1915.

1. Interstitial Gingivitis and Pyorrhea Alveolaris, stereopticon slides, Eugene S. Talbot.

2. Certain Factors Which Maintain the Chronicity of Mouth Foci of Infection, stereopticon slides, Arthur D. Black.

3. The Fly Campaign, W. A. Evans, Wm. M.

Roberts, superintendent vocational schools, and Harriet Vittum.

Regular Meeting, June 9, 1915.

1. Infantile Eczema—A Digestive Disorder, H. W. Cheney.

2. Some Notes on the High Percentage of Carbohydrates in Breast Milk, Effa V. Davis.

3. The Value of Transfusion in Inanition, Louis Fisher, New York, N. Y.

Annual Meeting, June 16, 1915.

Reading of minutes.

Reports of officers, committees, council and boards.

Induction of officers elected.

Miscellaneous business.

Adjournment.

DeKALB COUNTY.

The quarterly meeting of the DeKalb County Medical Society met at Sycamore May 7, 1915, with a large membership present. President S. S. Culver of Sandwich called the meeting to order.

The minutes of the January meeting read and approved. Dr. S. L. Anderson read a paper on "Infant Feeding." A general discussion followed, being lead by Dr. J. M. Everett.

Dr. Barton reported a case of acute perforating ulcer of the stomach, giving treatment. Discussed by Doctors A. M. Hill, C. E. Smith and J. W. Ovitiz.

Several communications were read by the secretary.

The society adjourned to meet on the last Friday in July for annual picnic.

J. B. HAGEY, Secretary.

IROQUOIS-FORD COUNTIES.

The regular quarterly dinner and meeting of the Iroquois-Ford Medical Society was held in the New Gilman Hotel, Gilman, Ill., Tuesday afternoon, June 1, 1915.

Members present: Drs. R. N. Lane, N. T. Stevens, O. O. Hall, L. C. Diddy, H. D. Junkin, Horace Gibson, Chas. Mellen, H. R. Struthers, R. E. McKenzie, S. M. Wylie, E. E. Hester and D. W. Miller.

After dinner and smoke the society was called to order by the president, R. N. Lane.

"Intestinal Autointoxication," by L. C. Diddy; discussed by Drs. Junkin, Wylie and Stevens.

"Diseases of the Thyroid Gland," by O. O. Hall; discussed by Drs. Junkin, Wylie and Stevens.

Report of the State Medical Society, by Horace Gibson.

W. L. Cottingham was elected to membership.

D. W. MILLER, Secretary.

KANKAKEE COUNTY.

The regular monthly meeting of the Kankakee County Medical Society was held at the Kankakee State Hospital on June 10, 1915. Owing to the generosity and courtesy of Dr. P. M. Kelly, superintendent, and his staff, the entire afternoon was spent with pleasure and profit. The doctors, their wives and friends were cordially received at center at 1 p. m.

At 2 they were conducted through many of the buildings and wards, all of which were models of neatness and comfort. At 5 p. m. all were comfortably seated in the amusement hall, and were entertained for an hour and a half by hospital talent in a manner that would do credit to any company at any time or place.

At 7, 150 sat down to a splendid five-course dinner, after which came cigars and short talks, some of them wise and some otherwise, until 9:30, when "Auld Lang Syne" was sung and the company departed. Much valuable information was gathered regarding the manner of conducting state institutions of this character, yet no suggestions were made for the betterment of the Kankakee State Hospital. All in all, Kankakee County Medical Society are under lasting obligations to Dr. Kelly and his able staff for the courtesies extended and the consideration shown. The meeting was then adjourned to Oct. 14, 1915.

C. F. SMITH, Secretary.

MACOUPIN COUNTY.

Macoupin County Medical Society held its second quarterly meeting in Hotel Nicolet, at Girard, April 27, 1915. President E. R. Motley of Virden presided in his usual pleasing manner. Twenty-eight members and visitors were present.

The proposed amendment to the constitution, "A quorum to do business shall consist of not less than five members," having been read at the last meeting, was unanimously adopted.

After reading and disposal of the minutes of the previous meeting, the treasurer's report and other minor business, the following amendment to the constitution was proposed for the next meeting: "The regular meeting held in April shall be known as the annual meeting, and at this meeting shall be held the election of the following officers: President, vice-president, secretary-treasurer, delegate and alternate delegate. The committee of censors shall be appointed by the president immediately after his installation."

The following officers were unanimously elected for the coming year: President, Dr. M. McMahon, Palmyra; vice-president, Dr. F. A. Renner, Benld; secretary-treasurer, Dr. T. D. Doan, Scottville; delegate, Dr. T. D. Doan, Scottville; alternate delegate, Dr. E. E. Bullard, Girard.

Palmyra was chosen as the place for the next regular meeting, to be held July 27, 1915. After the business meeting the members and their guests adjourned to the dining-room of Hotel Nicolet, where an excellent luncheon was enjoyed by all.

Mr. J. L. Pickering of Springfield, internal revenue collector of the Eighth District, gave a short talk on the Anti-Narcotic Law, after which those present asked him many questions relating to the requirements and duties of the law from the physicians' standpoint. Mr. Pickering's address was well received and highly appreciated by those who were so fortunate as to hear him.

Dr. C. D. Center of Quincy gave a fine address on "Medical Organization," which showed his excellent fitness for the high place he holds in the medical profession.

Dr. M. McMahon of Palmyra then gave a paper on "Recent Thoughts and Ideas on Arteriosclerosis." This paper showed by its high quality a careful preparation and exhaustive research along the line indicated.

A vote of thanks was given to Mr. J. L. Pickering for his fine address and replies to the many questions asked him and to Dr. C. D. Center for his interesting address and to Dr. M. McMahon for his splendid paper and to all others who helped to make the meeting a success. The society adjourned with the feeling that this was the most interesting meeting for many months.

T. D. DOAN.

MADISON COUNTY.

The rain did its level best to spoil our June meeting at Godfrey. Members from Greene County and Jersey County had been invited to meet the Madison County society in joint session and the indications were that over a hundred physicians and their wives would be present on that occasion. And then the rain came, and how it did rain from early morning until noon! But just at noon the rain was over and the sun came out, and in spite of muddy roads we had a very good meeting and a large attendance.

Eighty present from Greene County.

Four present from Jersey County.

Twenty-one present from Madison County.

Visitors: Drs. Frank R. Fry and Willard Bartlett of St. Louis, Dr. Carl Black of Jacksonville, Dr. Frank P. Norbury of Springfield and Dr. C. W. Lillie, president of the Illinois State Society of East St. Louis.

Ladies present: Mrs. R. S. Barnsback, Mrs. Lay G. Burroughs, Mrs. Willard Bartlett, Mrs. Mather Pfeifferberger, Mrs. E. C. Ferguson, Mrs. E. W. Fiegenbaum, Miss Edna Fiegenbaum and Mrs. E. C. Spitze.

The officers of the Greene and Jersey County societies were called to the platform and assisted in presiding.

By resolution of Dr. Pfeifferberger the secretary was instructed to devote one page of the "Madison County Doctor" to give publicity to the work the society is doing in the fight against tuberculosis. The same to appear monthly at a cost of \$4.00 a page to be paid out of the funds of the Madison County Anti-Tuberculosis Society. The secretary was also authorized to procure 8,000 bookmarks to be used by the several public libraries of the county and to procure a public lecture illustrated with 27 slides, on the subject of tuberculosis. The latter two items are recommended by the National Association for the Study and Prevention of Tuberculosis.

Dr. R. S. Barnsback made a report on visiting nurse and stated that he expected to place a nurse in the county in the near future. He was instructed

to continue negotiations and was again given power to act.

Dr. Pfeifferberger, as state delegate, gave a short report of the proceedings at the recent state meeting and announced Champaign as the meeting place for 1916. It was also announced that Dr. Pfeifferberger was selected as one of the delegates to represent the state at the meeting of the American Medical Association at San Francisco.

Th president of the Madison County Medical Society then delivered the annual address on "Medical Organization, which will be printed in the JOURNAL. Short talks were made by Dr. L. O. Frech, president of Greene County, and Dr. H. A. Chapin, secretary of Greene County, and Dr. H. W. Chapman of White Hall, also by Dr. H. R. Gledhill, vice-president of Jersey County. These were followed by addresses from Dr. C. W. Lillie of East St. Louis, president of the state society; Dr. Willard Bartlett of St. Louis, Dr. Carl Black of Jacksonville, Dr. Frank P. Norbury of Springfield, Dr. W. A. Haskell of Alton and others.

Altogether the meeting was very interesting and everybody had a good time. Delicate refreshments were served by Dr. and Mrs. W. H. C. Smith, for which and for the generous hospitality dispensed they were given a vote of thanks.

E. W. FIEGENBAUM, Secretary.

MCLEAN COUNTY.

The McLean County Medical Society met in regular session in the Council Chamber, Bloomington, Ill., Thursday evening, June 3, at 8 o'clock, with President Dr. H. W. Elder in the chair. In the absence of the regular secretary the president appointed Dr. Fisher to act pro tem.

The minutes of the regular meeting of May 6 and the called meeting of May 27 were read from the journal and approved.

The secretary read a communication from Dr. Nusbaum in regard to his annual dues. On motion the letter was referred to the secretary with instructions to look into the status of the doctor's membership in this society.

Dr. Cantrell, for the committee appointed at the meeting of May 27 to confer with the mayor in regard to the dispensing of liquors, reported that the committee had held a conference with the mayor, who had agreed to take the matter under advisement and talk to the committee at a later date. On motion the report was received and the committee continued.

The amendment to the constitution, changing the night of the regular monthly meeting, which was presented at the May meeting of the society, having laid over the prescribed length of time, was, on motion, unanimously adopted.

On motion the secretary was instructed to notify all members of the society that the regular night of meeting was changed from Thursday to Tuesday.

On motion the secretary was instructed to place the

following card in the daily *Pantagraph* and the *Sunday Bulletin* for one month:

By resolution the McLean County Medical Society requests that the physicians of Bloomington close their offices Thursday afternoons during June, July and August.

The auditing committee previously appointed having failed to report, the president appointed a new committee, Drs. Neiberger, Vandervoort and Welch, who, after auditing the accounts of the secretary-treasurer, reported a discrepancy of 30 cents. On motion the report was adopted.

On motion the following resolution was adopted:

Resolved, That this society requests all members having professional cards in the papers discontinue same so long as the cards of "quacks" are carried in professional columns.

On motion a committee consisting of Drs. Hart, Morris and E. P. Sloan was appointed to investigate unprofessional advertising and to report at next meeting.

The retiring president, Dr. H. W. Elder, then introduced the newly elected president, Dr. T. D. Cantrell, who addressed the society, giving particular attention to the medico-legal defense committee of the state society, of which the doctor is a member, and named committees for the ensuing year as follows:

Program—Drs. Howell, Neiberger and Sargent.

Judiciary—Drs. J. W. Smith, Chapin and R. A. Noble.

Sanitary—Drs. Meyer, Bath and Rhodes.

Civic League Delegates—Drs. Bath, Fisher and Cantrell (ex officio).

The society then listened to the report of Dr. Elder, the society's delegate to the state medical meeting at Springfield.

Dr. E. P. Sloan addressed the society on the subject of malpractice suits and in regard to the handling of X-ray pictures. Dr. Sloan also suggested that by way of outing and entertainment that the society make a trip to Starved Rock some time during this summer. No action was taken.

On motion a committee consisting of Drs. Calvert, Fisher and Vandervoort was appointed to make a revision of the constitution and by-laws of the society.

No further business appearing, on motion the meeting was adjourned.

Seventeen members present.

The officers elected at the annual meeting were inducted into office as follows: Dr. T. D. Cantrell, president; Dr. F. C. Fisher, secretary and treasurer; Drs. R. D. Fox, G. B. Kelso and P. E. Greenleaf, censors; Dr. H. W. Elder, delegate.

F. C. FISHER, Secretary.

OGLE COUNTY.

The Ogle County Medical Society met in the city hall building, Rochelle, on April 21, 1915, with President Stevens in the chair. Minutes of previous meeting were read and approved. Twelve members present, and eight visitors.

Dr. Charles H. Francis of Chicago gave a very interesting and instructive talk on "The Common Diseases of the Eye." Glaucoma and iritis, their diagnosis and treatment were well appreciated by all members present. An able discussion followed by Drs. Starkey, Clark, Beebe and Beveridge, Dr. Francis to close.

Dr. L. J. Pollock of Chicago read an able and scientific paper on "Locomotor Ataxia." Mechanical exercise for treatment was advocated. Discussion followed by Drs. Francis and Starkey.

Dr. Gordon Burke of Chicago gave a brief talk on "The Use of Nitrous Oxide in Obstetrics."

A vote of thanks was given to Drs. Burke, Francis, Starkey, Clark and Pollock. There being no further business to come before the society, the meeting adjourned to meet in regular session in April, 1916.

DR. J. L. KRETSINGER, Secretary.

ROCK ISLAND COUNTY.

The Rock Island County Medical Society met in joint session with the Scott County Medical Society at the Black Hawk Hotel, Davenport, June 8, 1915. The usual routine business was omitted. After a sumptuous banquet, with Dr. W. L. Allen acting toastmaster, the following toasts were responded to:

Our Ancestors—Native and Foreign—J. R. Hollowbush, Rock Island.

Our Medical Heroes, D. S. Fairchild, Clinton, Iowa.

War Experiences, George W. Crile, Cleveland, Ohio.

Address—The Phenomena of Acidosis and Its Dominating Influence in Surgery, George W. Crile.

Response to Address, George L. Eyster, Rock Island.

Dr. Allen was in his usual good spirits and by his wit and humor as well as by his genial countenance reminded us of our beloved poet, Dr. Oliver Wendell Holmes.

Dr. Hollowbush, under the inspiration of his large audience, rose at times to heights of sublime eloquence in discussing "Our Ancestors."

Dr. Fairchild related in an interesting manner his intimate association with many men who are heroes in the medical profession.

The societies were most highly favored by the presence of Dr. Crile, who is at the head of a unit of the Red Cross Society at the American colony in Paris. In a most graphic style he related personal war experiences. He pointed out the great value of preventive medicine in practically eliminating typhoid fever, smallpox and tetanus, and emphasized the difficulties with which the surgeon must contend in not being able to treat the soldier for hours and sometimes days after injury. The location, character and extent of wounds were illustrated by many lantern slides. The phenomena of pain and sleep were discussed. By microscopical slides thrown upon a screen he demonstrated the effect on the brain, suprarenal gland and liver of increasing the acidity of the blood and pointed out the striking similarity of microscopical slides of similar organs when affected

by exhaustion from fright and loss of sleep, ether and nitrous oxide narcosis and the products causing autointoxication, skatol, indol, etc. By correlating these findings he deduced many practical points in the treatment of surgical cases.

Dr. G. L. Eyster briefly discussed this address and in a few well-chosen words thanked the guest of honor in behalf of the Rock Island and Scott County Medical Societies.

Eighty-three sat at the banquet table, and fully one hundred and forty enjoyed this meeting.

A. E. WILLIAMS, Secretary.

VERMILION COUNTY.

The Vermilion County Medical Society met in the city council chamber, Danville, June 14, and was called to order by President Jones. The minutes of the May meeting were read and approved.

The program committee reported, recommending a program for the ensuing year. On motion the program was adopted as read.

Communication from secretary of State Board of Health was presented by Dr. Joseph Fairhall and read. It was to inform us that Dr. Thomas Owings was registered to practice in the state. Dr. Fairhall reports that he was not registered in the county as required by law.

Communication from Capt. L. B. Trites asking for a donation for the poor children's picnic was read. Motion carried that we donate five dollars out of the general treasury, and the secretary was instructed to send a check for the amount.

Program for the evening was as follows:

Handling Normal Labor—Dr. Buford Taylor.

Complications of Labor—Dr. F. M. Mason.

Discussion, led by Dr. W. R. Tenny.

The papers were very thorough and instructive. A lively discussion followed by Drs. Clements, R. A. Cloyd, F. N. Cloyd, Crist, Dale, Coolley, Wilkinson, Fisher, James and Gleeson. Discussion was principally on the use of pituitrin and repair of the perineum.

Under the head of new business Dr. Cochran reported that the city of Danville had a tuberculosis fund of about \$24,000, that this was increasing at the rate of \$5,000 a year and could be increased more rapidly. Dr. Cochran made a motion that the president appoint a committee of three to confer with the mayor as to the feasibility of erecting or arranging for a tuberculosis hospital. Motion carried. President asked for a little time to consider before appointing the committee.

Dr. Coolley reported on Dr. R. J. Williams of Pence, Ind., becoming a member of our society. The secretary of the State Society of Indiana could see no reason for a member's joining a county society of another state. It was Dr. Coolley's opinion that he would not be eligible to membership in this state. It was the opinion of the majority of the members present that he was eligible, as he was licensed to practice in Illinois. On motion the secretary was

instructed to write to the secretary of Dr. Williams' county for permission to make him a member of our society.

Twenty-seven members were present. There being no further business, the meeting was adjourned in form.

O. H. CRIST, Secretary.

WINNEBAGO COUNTY.

The Winnebago County Medical Society met at Nelson Hotel, Rockford, May 11, with 35 members present and 10 visitors; Dr. H. M. Starkey in the chair. The reading of minutes was suspended.

Dr. Ralph Webster of Chicago Laboratory was introduced by the president as the speaker for the evening. Dr. Webster spoke on the subject of "Vaccines." He discussed briefly the theoretical phase, and very exhaustively the practical phase of this important topic. Some of the leading points dwelt on were as follows: Not to use vaccines in acute general infections; more decided use of antogenous vaccines; continuance of medical treatment in all diseases.

General discussion followed, and Dr. Webster was given a rising vote of thanks, after which the meeting adjourned.

DR. C. M. RANSEEN, Secretary.

Personals

Dr. Louis F. Morse, Cobden, is said to have suffered a slight cerebral hemorrhage, June 4.

Dr. Horace B. Dunn, Rockford, has recovered from his recent illness and resumed practice.

Dr. Melvin L. Hole has been appointed local surgeon for the Illinois Traction System at Danville.

Dr. Isaac L. Beatty, Fairview, has been appointed an internal revenue collector and inspector under the Harrison law.

Dr. Herman P. Harder has been elected president, and Dr. Albert H. Roler, secretary of the Evanston Tuberculosis Institute.

Dr. William F. Bowman, Fishhook, had a narrow escape from drowning while attempting to ford a flooded creek in Brown County.

Drs. John L. Taylor, Libertyville, and John C. Foley, Waukegan, with their families, started on an automobile trip to the Pacific Coast, June 15.

Dr. Darwin Kirby, Champaign, was elected president and Dr. Horatio W. Miller, Urbana, secretary of the Twin City Clinical Society, at its meeting in Champaign, June 1.

June 24, Dr. Arthur M. Corwin, Chicago, de-

livered the address at the annual joint meeting, ladies' night, of Rock and Walworth County Medical Societies, at Delavan Lake. One hundred and seventy-five at dinner.

Dr. Caroline Hedger, Chicago, returned June 11 from seven months in Belgium, as the representative of the Woman's City Club. She could say (if she would) like the foreigner seeing the boiling geyser in Yellowstone Park: "Hell is not far from this place!"

News Notes

—Dr. A. N. Mueller was reappointed Rock Island County physician for the fourth term.

—The sixty-sixth annual meeting of the Illinois State Medical Society will be held at Champaign beginning on the third Tuesday in May, 1916.

—A joint meeting of the Greene, Jersey and Madison County Societies at the home and school of Dr. W. H. C. Smith of Godfrey was announced for June 4.

—The Tribunc Summer Hospital for the Convalescent at Algonquin, with accommodations for from six to seven hundred sick women and their babies, was opened for the season June 21.

—At the annual graduating exercises of Rush Medical College, June 16, a class of seventy-five was graduated and Dr. Edward Carl Rosenow delivered an address on "Recent Advances in Medical Research."

—Plans are being prepared for the new building for the Maplewood Sanitarium, Jacksonville, to be erected this summer by Dr. Frank P. Norbury and Dr. Albert H. Dollear. The new building will accommodate fifty patients.

—In honor of the opening of the addition to St. Anthony's Hospital, Rockford, a dinner was given to the medical staff, June 3. Addresses were made by Bishop Muldoon and Drs. Clifford U. Collins, Peoria, and George P. Gill, Rockford, the first intern at the hospital, and others.

—The Chicago unit to take charge of a base hospital in England or do field work in France, sailed June 15, on the New Amsterdam from Hoboken. The personnel included fifteen Chicago physicians, surgeons and specialists; three from other Illinois cities and fifteen from other

states. About seventy nurses, including many local graduates, will serve with the unit.

—At the annual meeting of the Alumni Association of Northwestern University Medical School, held June 7, the following officers were elected: President, Dr. William R. Cubbins, '00; secretary, Dr. Arthur B. Eustace, '07 (reelected); treasurer, Dr. Leo G. Dwan, '07 (reelected); and necrologist and alumni editor, Dr. Samuel C. Stanton, '92. At the alumni banquet that followed the meeting, Dr. Archibald Church presided as toastmaster and the speaker of the evening was Prof. E. R. Keedy, who delivered an address on "Medico-Legal Criminal Borderland."

—At the annual election of the Physicians' Club of Chicago, June 3rd, the following officers were elected unanimously: Secretary, Arthur M. Corwin; directors to serve for two years, Joseph Zeisler, Henry T. Byford, and Charles P. Caldwell. At the directors' meeting, June 10th, Dr. Zeisler was chosen chairman for the year, and Dr. Caldwell, treasurer. The holdover directors are Drs. C. S. Williamson, Alfred Murray and Thomas Woodruff.

—At the annual meeting of the Chicago Medical Society, June 15, the following officers were elected: Dr. A. Augustus O'Neill, president-elect; Dr. Charles E. Humiston, secretary (reelected); Drs. Charles H. Miller, Charles C. O'Byrne, Douglas A. Payne, Fred L. Glenn and Jacob C. Krafft, councilors-at-large; and Drs. John J. Toeller, Edward J. Devine, Rachelle S. Yarros, Sadie Bay Adair and Louis H. Friedrich, alternate councilors-at-large.

—The friends of Dr. Charles P. Caldwell are arranging to give a good fellowship banquet at the Auditorium Hotel, July 15, 1915. The physicians of Chicago owe Dr. Caldwell a lasting debt of gratitude in recognition of his long, active and honorable service to the profession, and it is the desire of those arranging this function that all participate in carrying forward the same to a most befitting and successful end, and take this opportunity of inviting you and your helpful enthusiasm. There will be a committee meeting Saturday, July 3d, 9 p. m., at the Auditorium Hotel, which all physicians are invited to attend.

Dr. Wm. O. Krohn, 29 East Madison street, is chairman, and Dr. I. C. Gary, 253 West Twenty-

second street, is secretary of the banquet committee. Kindly address them for further information.

Physicians from outside Chicago attending the meeting of alienists and neurologists will be welcomed at this banquet.

—The Aesculapian Society of the Wabash Valley held its sixty-eighth semi-annual meeting in Charleston, May 27. An excellent scientific program was given and the members and visitors were entertained at a banquet by the Coles County Medical Society. At the banquet "Reminiscences" were indulged in by Dr. Buchanan of Paris. "The Doctor in Politics," was depicted by Dr. Bell, mayor of Charleston. A poetical address was given by Dr. E. B. Cooley, councilor for the eighth district. And "The Future Practitioner" was toasted by Dr. John A. Robison, president of the State Board of Health.

—The annual faculty banquet of Rush Medical College, to the graduating class and alumni, was given June 16. Addresses were made by Dr. J. B. Herrick and President Judson of the University of Chicago in which the development of Rush College as a part of the university was forecasted. Prof. L. Hektoen, acting for the faculty, presented a watch to Dr. E. C. Rosenow, who leaves the faculty to become a member of the Mayo foundation. Dr. B. McPherson Linnell has been elected president of the Rush Medical College Alumni Association; Dr. C. A. Parker, secretary; Dr. Elmer E. Kenyon, treasurer.

The annual meeting of the Iowa and Illinois Central District Medical Association was held at Davenport, Iowa, July 8, 1915, at 2 p. m.

Headquarters and place of meeting was at the Davenport Outing Club.

PROGRAM.

1. Address of the President, F. H. Gardner, Moline.
2. Abdominal Pain, with Special Reference to High Blood Pressure, L. D. Barding, East Moline.
3. Lessening the Risk for the Surgical Patient, H. M. Decker, Davenport.
4. Source of Infection and Prognosis in Tubercular Infants, R. P. Carney, Davenport.
5. Traumatism as an Etiological Factor in Pulmonary Tuberculosis, J. W. Pettit, Ottawa.
6. Surgical Limitations in the Treatment of Pelvic Inflammations, Palmer Findley, Omaha.
7. The Course of Thyrotoxicosis, H. S. Plummer, Rochester.
8. The Recognition and Treatment of Certain Irregularities of the Heart (with lantern slides), J. B. Herrick, Chicago.

Marriages

ERNEST LACKNER, M. D., to Mrs. Carrie Klein, both of Chicago, June 3.

CLARENCE H. BRYAN, M. D., to Mrs. Ray N. Mathews, both of Chicago, May 15.

JOHN WESLEY CLAYTON, M. D., Johnson City, Ill., to Miss Agnes Doty of Marion, Ill., June 2.

THOMAS EDWARD CONLEY, M. D., Park Ridge, Ill., to Miss Ellen May Raynor of Chicago, June 21.

CHARLES TAYLOR MOSS, M. D., Champaign, Ill., to Miss Lillian K. Christoph of Chicago, June 14.

JOSEPH FRANCIS MELOAN, M. D., Media, Ill., to Miss Josephine Michael Block of Elsberrry, Mo., June 1.

FAIRFAX HALL, M. D., New Rochelle, N. Y., to Miss Eleanor Reyburn Remy of Evanston, Ill., at Port Chester, N. Y., May 29.

"Grave" Jokes.

There is a whole quart of truth in that old jingle about "A little nonsense now and then," etc. If it were not for this occasional nonsense the vital statistics recorder would have a dry time indeed. Here are samples of some of the things he finds on death certificates under the heading *Cause of Death*.

"Went to bed feeling well, but woke up dead."

"Died suddenly at the age of 103. To this time he bid fair to reach a ripe old age."

"Do not know cause of death, but patient fully recovered from last illness."

"Deceased had never been fatally sick."

"A mother, died in infancy."

"Died suddenly, nothing serious."

"Pulmonary hemorrhage—sudden death. (Duration four years.)"

"Kick by horse shod on left kidney."

"Don't know. Died without the aid of a physician."

"Deceased died from blood poison, caused by a broken ankle, which is remarkable, as his automobile struck him between the lamp and the radiator."

"Blow on head with ax. *Contributory Cause*—Another man's wife."—*Michigan Monthly Bulletin of Vital Statistics*.

Book Notices

OUTLINES OF INTERNAL MEDICINE. FOR THE USE OF NURSES. By Clifford Bailey Farr, A. M., M. D., Instructor in Medicine, University of Pennsylvania; Assistant Visiting Physician, Philadelphia General Hospital; Pathologist to the Presbyterian Hospital.

12mo., 408 pages, illustrated with 71 engravings and 5 plates. Cloth, \$2.00 net; Lea & Febiger, Publishers, Philadelphia and New York, 1915.

An excellent text-book for nurses, confining itself to internal medicine, and presenting the subject with the single purpose of meeting the nurses' needs. Divided into "Parts" dealing with diseases of the various systems and with the harmful agencies (physical, chemical and bacterial) from without. For the nurse this text-book is an ideal one and, if studied, will furnish the nurse with sufficient information on the subject of internal medicine.

THE PRINCIPLES OF BACTERIOLOGY. A Practical Manual for Students and Physicians. By A. C. Abbott, M. D., Professor of Hygiene and Bacteriology and Director of the Laboratory of Hygiene, University of Pennsylvania. 12mo, 650 pages, with 113 illustrations, 28 in colors. Cloth, \$2.75 net. Lea & Febiger, Publishers, Philadelphia and New York, 1915.

This edition of Abbott places it in the ranks of an up-to-the-minute work on bacteriology. All that is new in bacteriology has been incorporated in this new edition. For those in need of a modern book on bacteriology, this edition of Abbott can be recommended as furnishing all the information necessary for a study of this subject. The illustrations are ample and the mechanical work good.

THE INTERVERTEBRAL FORAMINA IN MAN. The morphology of the intervertebral foramina in man, including a description of their contents and adjacent parts, with special reference to the nervous structures. (Supplement to "The Intervertebral Foramen".) By Harold Swanberg, Member American Association for the Advancement of Science, with an Introductory Note by Prof. Harris E. Santee, from the Anatomical Laboratory, Chicago College of Medicine and Surgery. Illustrated by 11 original full-page plates. Price \$1.75. Chicago Scientific Publishing Co.

A book of 95 pages, being devoted to a description of the intervertebral foramina and their contents, and surrounding tissues.

THE MEDICAL PICKWICK. Published by the Medical Pickwick Press, Saranac Lake, New York. \$2.00 per year; Canada \$2.50; Foreign \$3.00.

An unusual monthly that has come to our desk, and that was not laid aside until gone through from cover to cover, and then some more.

The editors are to be congratulated upon their excellent idea in the issuance of this journal, which should become as popular among physicians as any journal or magazine now on their desks. Its contents are bound to relieve that tired feeling and make one wish for more. Its purpose is to present to the medical man excerpts from secular literature, illustrating points in medical history and medical thought, and many other original features—short stories, anecdotes, reminiscences, and cartoons that have to do with the doctor.

MODERN MEDICINE. Its Theory and Practice. In Original Contributions by American and Foreign Authors. Edited by Sir William Osler, Bart., M. D., F. R. S., Regius Professor of Medicine in Oxford Uni-

versity, England; formerly Professor of Medicine in Johns Hopkins University, Baltimore; in the University of Pennsylvania, Philadelphia, and in McGill University, Montreal; and Thomas McCrae, M. D., Professor of Medicine in the Jefferson Medical College, Philadelphia; Fellow of the Royal College of Physicians, London; formerly Associate Professor of Medicine in Johns Hopkins University, Baltimore. In five octavo volumes of about 1,000 pages each. Volume V. Diseases of the Nervous System; Diseases of the Locomotor System. *Just ready*. Price per volume, cloth, \$5.00 net; half morocco \$7.00 net. Lea & Febiger, Publishers, Philadelphia and New York, 1915.

The last volume of this truly monumental work is just from the press. It is difficult to conceive of a work on the practice of medicine which so completely covers the entire field. In Volume V. are considered the diseases of the nervous and locomotor systems.

In view of so much recent study in this field, this volume is of great importance and adds a distinct value to the completed work. The subjects are so fully discussed and present so much that is new, that the neurologists will find it of value. The contributors to this volume are:

Lewellys F. Barker, M. D., LL. D., Johns Hopkins; Edwin Bramwell, M. D., F. R. C. P., Royal College, Edinburgh; Chas. W. Burr, M. D., University of Pennsylvania; E. Farquhar Buzzard, M. D., F. R. C. P., London; L. Pierce Clark, M. D., New York; Joseph Collins, M. D., New York; Harvey Cushing, M. D., Harvard; George Dock, M. D., Washington University; Charles P. Emerson, M. D., Indiana University; Gordon M. Holmes, M. D., M. R. C. P., London; Smith Ely Jelliffe, M. D., Ph. D., New York; Daniel McCarthy, M. D., University of Pennsylvania; Thomas McCrae, M. D., F. R. C. P., Jefferson Medical College; Colin K. Russell, M. D., McGill University; Barnard Sachs, M. D., New York; C. G. Southard, A. M., M. D., Harvard; William G. Spiller, M. D., University of Pennsylvania; Walter R. Steiner, M. D., Hartford; Edward W. Taylor, M. D., Harvard; Henry M. Thomas, A. M., M. D., Johns Hopkins.

We think this system of medicine is unexcelled in the English language, and no practicing physician or surgeon can afford to be without it.

A SURVEY OF INDUSTRIAL HEALTH-HAZARDS AND OCCUPATIONAL DISEASES IN OHIO. By E. R. Hayhurst, A. M., M. D., Director, Division of Occupational Diseases, State Board of Health. Prepared in Conformity with House Joint Resolution No. 12, Eightieth General Assembly of Ohio, under the General Supervision and Direction of the Ohio State Board of Health, E. F. McCampbell, Ph. D., M. D., Secretary and Executive Officer. February, 1915. Columbus, Ohio. The F. J. Heer Printing Co., 1915.

THE MODEL T FORD. Its Construction, Operation and Repair. A Complete Practical Treatise Explaining the Operating Principles of All Parts of the Ford Automobile, with Complete Instructions for Driving and Maintenance, Includes the Most Thorough and Easily Understood Illustrated Instructions on Ford Repairing Ever Published, based on Five Years' Experience of a Ford Operator—Invaluable to all Ford Owners, Dealers, Salesmen, Drivers and Repair Men—Every Phase of the Subject Treated in a

Non-Technical Yet Comprehensive Manner. By Victor W. Page, M. E., Member of "The Modern Gasoline Automobile," etc. Illustrated by over 100 Specially Made Diagrams and Distinctive Original Photographs of Actual Parts, all in Correct Proportion. New York. The Norman W. Henley Publishing Co., 132 Nassau Street. 1915. Price \$1.

VOLUME 4—THE AUTOMOBILE BLUE BOOK, 1915. American Automobile Association. 15th Year. Uniform and Intercommunication with

Vol. 1, New York State and Canada,

Vol. 2, New England and Eastern Canada.

Vol. 3, Pennsylvania, New Jersey and the South,

Vol. 5, Pacific Coast States.

Price \$2.50 per volume. The Automobile Blue Book Publishing Co., Chicago, 910 South Michigan Avenue; New York City, 243 West 39th Street.

The Automobile Blue Book, which has made its appearance for 1915—the motorist's Baedeker—has several new features that should greatly enhance their value to their legion of users.

For the year 1915 a sixth volume has been added to the five formerly published, the infant of the Blue Book family giving road information in the scenic states of California, Oregon and Washington and the Province of British Columbia and completing the survey of tourable North America.

In the middle western states covered by Volume No. 4, 40,000 of the 58,000 miles of route matter included are given from absolutely new draftings made the past summer, to keep pace with the big strides made in 1914 in both state and country road improvement. West of the Mississippi (Volume No. 5) principal attention is centered on the travel to the coast. Four distinct transcontinental routes are laid out with connecting links to popular scenic sections near these main lines of travel.

DISEASES OF THE DIGESTIVE ORGANS. With Special Reference to their Diagnosis and Treatment. By Charles D. Aaron, Sc. D., M. D., Professor of Gastro-enterology in the Detroit College of Medicine and Surgery; Consulting Gastro-enterologist to Harper Hospital. Octavo, 790 pages. Illustrated with 154 engravings, 48 roentgenograms and 8 colored plates. Cloth, \$6.00 net.

A new work on the diseases of the digestive organs, which will undoubtedly become popular. It covers the entire subject of diseases of the gastro-intestinal tract and of the organs aiding digestion. It is a work written from the viewpoint of an internist, and the relationship between general diseases and the digestive tract are clearly presented.

The surgical diseases, however, are not neglected. The diagnosis and likewise the treatment are presented in a masterly manner—nothing superfluous or unimportant being used for the purpose of padding.

The internal secretions, the various tests and reactions, improved methods of examination of stomach and duodenal contents and feces; dietetics; mineral-water therapy; hydrotherapy; function of liver and pancreas, etc., are all clearly presented and set forth. The roentgen examination has not been neglected, its importance being well emphasized. Altogether, it is a work that one can use with profit to himself and patient.

ILLINOIS MEDICAL JOURNAL

THE OFFICIAL ORGAN OF

THE ILLINOIS STATE MEDICAL SOCIETY

VOL. XXVIII

CHICAGO, ILL., AUGUST, 1915

No. 2

Original Articles

ADDRESS OF THE PRESIDENT.*

ALBERT L. BRITTIN, M. D.,
ATHENS, ILL.

Fellow Officers and Members of the State Medical Society: My first duty is to thank you for the privilege of appearing before you and having the opportunity of addressing you on the important practical problems that are facing the medical profession today. I look upon this as the most important session of our annual meeting, for I cannot too strongly emphasize the fact of the importance of the county medical society as the fundamental unit of our entire organization, and the paramount importance of the county secretaries as the prime forces of the county medical society. We know the importance of the cell in the structure and functioning of the organic body. Well, the county medical society is the basic cell in the structure of the organized medical profession; and as pathologists, we know that the health of the body depends on and is governed by the condition of its fundamental unit cells. How important, therefore, it is that every question affecting the mind of the organized medicine today should be thoroughly appreciated and understood in all its bearings by the individual county societies, I need not labor to bring home to you; nor need I dwell upon the importance of bringing those questions directly before the assembled body of secretaries because to them must their individual members look for light and leading; on them must ultimately depend homogeneity in ideals, earnestness and enthusiasm in work; and through them must be achieved co-ordinated action and that unity of purpose which commands and obtains success.

And right here at the very beginning let me sound the optimistic note, for I am optimistic

in all things regarding the profession. When I take a general survey of what has been done and what is being done, both for the progress of scientific medicine and for the betterment of the individual members of the profession, I can see only reasons for congratulation. Obstacles there are yet, indeed, and some dark spots to efface; but it is only by surmounting difficulties that we thrive and we cannot hope to reach the heights of Parnassus without stumbling over jagged rocks on the way. Some of these difficult spots I shall take the opportunity of bringing before you today, and not only that you may become familiar with them but in order that you may see that they are not such as cannot be overcome by sturdy men who work with a will and a purpose.

The first question which should occupy the foremost place in the estimation of every county secretary is the importance of his county medical society as the unit which binds him and his fellow members in the chain of organization. The chain is just as strong as its weakest link and at that spot it will snap when the strain is on it. Now, if the county societies are not strong in membership, strong in their allegiance to common principles and strong in their determination to meet and overcome difficulties, no amount of strength in the State and National organizations will suffice to hold the chain together. It is the prime duty of every secretary to see to it that every regular member of the profession in his county is a member of the county medical society. Every effort must be made to bring this about, and not only make him a member, but a member with a purpose; an active, live member who will be interested in the honor of his society and in seeing to it that it does not lag.

Organization and unity is not urged merely in the interest of the profession itself. Its value is clearly admitted for the better fulfillment of the duties and relations of the profession and the

*Delivered at the Secretaries' Conference, May 18, 1915.

public and for the accomplishment of the high aims in the progress of scientific medicine. In another address I have shown that it is the duty of our profession to be the torch-bearers in leading the people to a knowledge and appreciation of the scientific facts underlying personal health and industrial sanitation and in no way can we attain the prestige that will insure the respect and co-operation of the people better than by showing them an organized profession with clear conceptions as to its mission and unity of purpose for its achievement.

I do not think that I need dwell then at greater length on the necessity for a strong and united county medical society.

But when you have got your members, how are you to keep them interested? I know very well that it is difficult. It is hard for the tired doctor to attend and it is incessant and often thankless work for a secretary to endeavor to get his members to attend meetings and interest them. One of our esteemed State officers has suggested the value of the social element in the county meetings. He instanced how successful one secretary was who invited the members to meet socially at his home. These meetings were more or less informal but were largely attended and the habit of meeting at the homes of the members became contagious and they were always largely attended, and with consequent interesting discussion.

I may also suggest the invitation of some prominent men from our own or a neighboring State. Such men like to be thus complimented and usually comply and make an interesting meeting.

On the discussion of topics interesting to the public generally, particularly public health matters, prominent laymen should be invited and asked to join in the discussion.

The secretary most particularly should keep himself informed of new developments in medicine and suggest the topics either for discussion or as the basis of a paper. In this regard he should urge his members to write papers not only for the county meeting but for the State annual meeting and he should personally see that the members who have undertaken such should make these papers worthy of their society and of themselves, not merely a rehash of a textbook. The secretary should be competent to advise how such

papers should be prepared and be at all times ready to give such advice and help, and such interest will be appreciated by the members.

As regard the official duties of the secretary, stress must be laid on the necessity of keeping the State secretary informed as to the correct names of all county officers and committees and also of the movements of members away from his county. These are small matters but are important.

Now, the proper execution of these and other duties which fall to a secretary's lot requires time and work and no man should undertake the office who has not prepared to give both. The success of the profession in each county depends on the thoroughness of the secretary's work and it is dishonest as well as dishonorable for any man to take up this arduous position and then shirk his duties.

These are several important questions which you will be expected to ventilate before your members and get expression of their opinion. Of these, perhaps, the most important is that of "Medical Defense." To the individual member medical defense is, perhaps, the greatest benefit which connection with the State organization confers, and I venture to say that as time goes on it will become even more important than in the past, owing to the peculiar relations of the doctor under the Workmen's Compensation Acts and similar new departures. The existing procedure in this regard is far from satisfactory and it is very desirable that a fixed and uniform method of referring all cases through the county society medico-legal committee to the State secretary in the first instance be adopted. It is, of course, a matter for the State society to adequately insure all its members. I think it is obvious that the State officials would be in a better position to handle such matter more economically and more judicially than if left to the local practitioner's choice of his legal advisors with the subsequent dispute over fees.

A matter which has greatly agitated the minds of the profession in this and other States is the relation of the physician to the Workmen's Compensation Act. Now it appears to me that somewhat wrong conceptions and hasty conclusions have been made regarding this. The two most important facts affecting the profession is the

scale of fees for medical service and the right of the patient to appoint his own physician.

As regards the first it should be pointed out that it is not clear that government or anyone else can arbitrarily fix medical fees, or that a physician is bound to give his services in such cases for such fees. The clause in the Act providing for the regulation of fees appears to me to have been drawn not as discriminating against the doctor but to prevent undue amounts being claimed either by employes or employers from insurance companies on the score of medical services. But the phraseology of the clause basing the compensation to the physician on the social condition of the patient rather than on the value of the service rendered is to my mind objectionable and should be remedied.

The right of the patient to select his medical attendant is a matter to be insisted on. The onus of providing medical assistance is on the employer, who has passed it on to the insurance companies. They will undoubtedly restrict the choice to their own nominees if they are permitted to do so.

As obviating these more or less disadvantageous aspects, there are several viewpoints of advantage to the profession. First, if the fees paid are on a minimum scale, yet their payment is assured. The government acts as a collecting agency for the collection of such fees and formerly in many such cases the physician got nothing or was even out of pocket. Considering the magnitude of the industrial activities of the country and the large number of cases, this is no small advantage. Certain and prompt payment in every case is worth more to the profession at large than higher fees collected only in a percentage of cases.

Again, the fact that a workman's savings are not spent in medical assistance in case of accidents warrants him in being able to pay for medical assistance when necessary for other members of his family, which, as we well know, was not always the case.

The third advantage lies in the fact that neither government nor insurance companies, acting for employers, can make this Act a success without full co-operation of the medical profession. It was not, as I have said, the intention of the government either to be detrimental or beneficial to the interests of the profession in

putting this Act in force. I believe that on the whole it is advantageous to the profession and it is clear at least to my mind that by organized and united effort the profession can and will succeed in abrogating any features that can reasonably be shown as derogatory to its dignity and interest. County medical societies throughout the State should, through their medico-legal committee, lay down the condition for the application of the Act to their counties and should firmly insist as a matter of ethics on their members observing them. A stand for what is right and just will always have the support of the people; and it must be remembered that in the last analysis the cost of medical insurance is included in the cost of the industrial product and falls on the consumer and not on the manufacturer. The people are entitled under circumstances to the best care and treatment, and it should be made clear to them that they cannot expect that, and are being cheated out of, their legal right if a niggardly spirit is displayed toward the profession and rock-bottom fees tendered by interested middlemen. The profession is standing on its own rights when clearly championing the rights of the people.

Much of these remarks are applicable also to the question of

CONTRACT AND LODGE PRACTICE.

Perhaps the most important matter before the profession today is this question of contract and lodge practice. It is certainly a most humiliating and degrading condition that qualified members of this noble profession should resort to wire-pulling and subterfuge and undervalue themselves to the extent that they offer their services for a miserable few dollars per capita yearly. Yet such is the case not only in this state but elsewhere.

In seeking a remedy for a state of affairs which is admittedly most unsatisfactory we must, however, try to consider it dispassionately. We must look at it from both sides, from the profession side and from the public side. From the profession's point of view we see that the condition is largely due to our internal economics. The fact is that in the United States the medical profession is and has been overcrowded. We have here one doctor to every five hundred of population, whereas in Germany for example the proportion is one to every two thousand. The

low contract rate practice is primarily the result of necessity on the part of our young men who find the cost of living high and the building of a practice slow under existing conditions.

From the public viewpoint the question is also an economic one. Lodge and contract practice is the natural growth of the necessity which a large section of the public find of insuring itself against the cost of sickness and medical attendance.

It is a fact in our present day mode of living that in most families that are not paupers although medical service is and ought to be the first necessity, it is treated as a luxury and no provision is made for it. They depend either on the free clinics or dispensary or on such medical benefit as can be obtained by virtue of a membership in a lodge or benefit society. Now we have to face the fact that this principle is accepted by a large section of the public and that it is here to stay and we must deal with things as they are.

From the public viewpoint, as I said in crowding are being gradually eliminated. It is a hopeful sign that in 1912 there were 800 physicians fewer than in 1900 in the United States and 35 fewer medical schools and colleges than a decade ago. The gradual closing of disreputable schools and the raising of standards will in time, acting simultaneously with the rapidly increasing population, bring about employment for all qualified members of the profession.

From the public viewpoint as I said in connection with the Workmen's Compensation Act, the people are entitled to the best and I believe that they are honestly desirous of paying a fair price for service. When they are educated to see that they are the principal losers in being the recipients of inefficient service their own interests will force them to see that proper service can only be obtained by proper remuneration.

Fulminating against our professional brethren who are forced into a disreputable position will do little good. We must educate our students and younger members and show them that such practice is most detrimental to the ideals of a high and noble profession and that they are handicapping themselves in the eyes of the public by undervaluing their service. What respect can the public have for the services of a professional man who himself values his services to a whole family at a few dollars per twelvemonth?

Each county medical society should have a committee on medical economics, which should decide the minimum fees for contract practice in every case and regulate all matters in dispute. They should educate the people on the value of medical service and their own members on the importance of strict adherence to their regulations. Departure from such standards by any member should be strictly dealt with and censured. As a matter in point I quote the following from the *Buffalo Express* of January 18, 1914, as regards Niagara County, New York:

The Twin City Academy of Medicine has made arrangements whereby no physician in the Tonawandas will accept contract work with any local manufacturing plants or fraternal organizations at any other than regular family rate. Heretofore contracts were made at a very low rate.

This is the principle on which we in this state should work and I hope that every secretary present will bear this message home to his own county medical society.

The measure of your success in the questions to which I have alluded will be gauged by the strength of your membership and their solid unity of opinion. The ideal to which every county medical society should look forward is the enrollment in it of every ethical physician in the county. The time is ripe and occasion demands that differences which have resulted in nothing more than a weakening of our professional dignity and standing should be leveled and the county medical society platform made broad enough to admit all honorable ethical practitioners who have fulfilled the state requirements no matter to what school they belong. I think such a reunion would be welcomed; and that it would have advantages for all concerned may I venture to say might be admitted. After all, there is but one common purpose and around that one central thought all minor differences vanish. And for further common purpose that all practitioners should have of being able to do their great work under the best possible circumstances for themselves and for those they serve it is most expedient and desirable that they form one compact united body.

It is freely admitted that it is only because as a profession we are disunited and pulling different ways that practices and legislation detrimental to our interests have become effective. A united profession would command the respect

and support of the public and the representatives of the public. The expression of opinion from a united profession would carry authority with it and I venture to say that no legislature would dare to disregard it or to force legislation which such opinion would state to be inimical to its own usefulness in serving the people or calculated to be detrimental to the public health.

And that this unity and the force behind it is necessary there can be little doubt, since we have evidence that there is a tendency to meddlesome and ill-digested legislation, on matters in which the profession is vitally interested, without due recognition of the right of the profession to have its voice heard before such enactments are put in force. The remedy is organization—strong organization—and the instillation into the public mind that public interests and professional interests are identical. Both legislators and the people they represent must be shown that our requests are reasonable and based primarily on our solicitude for the public good. When we show that we have no selfish interests to push them, common sense and prudence will do the rest.

The watching of meddlesome legislation, no matter of what kind, is more a matter of the national and state associations than for the county medical society, but nevertheless every individual practitioner should be alive to it and ready to lend his assistance and support.

And in furthering this point of view it is most desirable that the physicians of every county should take a direct interest in the education of the people in public health questions and matters affecting social betterment. Preventive medicine has so many ramifications and so much depends on the co-operation of the people that it is necessary that they should be kept fully informed on it. While at all times legislation on public health should be the demand of the people, yet the position should be that the people would naturally look to the profession for light and leading regarding it. Co-operation then with laymen by public lectures and any other desirable means should be the rule of the profession in every county. The secretary of every component society should be a member of the public health section of the Illinois State Medical Society.

The state society may be trusted with the duty of looking after medical quackery and the at-

tempt of unqualified persons to practice the art of medicine; but all such activities in any county should be watched and duly reported.

I have now exhausted the topics to which I wished to draw particular attention.

To summarize:

Let your first endeavors be to make your individual societies as strong as possible.

Keep your members interested in the work and aims of organized medicine in the progress of medical science and in the development of a bond of common interest and fraternalism between ourselves and all other duly organized medical societies. Do this by more frequent social intercourse—by invitation of members of other societies to lecture before you and any other means compatible with the end in view.

Raise the standards of the papers read at your meetings. Let the contributions of your members to the JOURNAL be conspicuous for their excellence.

Be careful to comply in full with your official duties in connection with the state society.

Show your members the importance and necessity of a uniform method of dealing with the questions arising out of medical defense, and all questions in which legal action against a member or by a member is threatened.

Organize within your society a committee to deal with and regulate the conditions for contract and lodge practice.

Cut loose from factionalism and medical sectarianism—open your doors and welcome as members all ethical physicians no matter to what school they belong if they are only licensed by the state to practice medicine.

Interest your members and your society to join hands with the public in all social questions—particularly public health questions—and to see to it that the public get right ideas as regards the attitude of the profession towards the public welfare. Let your slogan be "Unity," Unity for the good of the People and Unity for the good of the Profession.

In conclusion I will say as I said in the beginning that I am optimistic in everything regarding the profession. I foresee that what appears dark will pass away. I think the profession stands today on a higher plane of dignity and progress than at any time in its history. The future seems to me to be full of brightness and I wish that every member may take this same

optimistic view. As someone has said, the world is like a mirror. Smile at it and it will smile back at you—frown and the frown will be returned. Let us therefore smile at our fellowmen. Let us show them that we trust and honor them. And thus we shall retain for ourselves honor, trust and esteem.

Fellow officers, I thank you for the courtesy of your attention.

THE MAKING OF A MILK COMMISSION*

J. W. VANDERSLICE, M. D.

Assistant Professor Medicine, Rush College; Secretary Chicago Medical Society Milk Commission.

OAK PARK, ILL.

Certified milk has now reached a point in its development at which it is no longer considered solely as a clinical milk but rather as a commercial commodity, which by its utility has gained for it the high plane of regard in which it is now held by the profession and laity.

Certified milk was first produced under the certification of the Essex County, N. J., Medical Milk Commission in 1890, Dr. Henry L. Coit being the originator and indefatigable promoter.

The vision of Dr. Coit and his co-workers in the field of a clean, pure milk, was sufficiently broad to embrace the ever widening scope of this work; this is manifest by the comprehensive contract first entered into between the producer and the commission; this contract with but minor changes is accepted as the working standards of all medical milk commissions.

The propaganda for clean milk, which crystallized in the certified milk movement, was the pioneer of the infant welfare organizations and there is a connecting link in most of the milk commissions with the infant welfare societies.

The conception of certified milk embraces not only the production of a clinical milk but the broader view of encouragement of the production of a better milk supply for the community at large. The educational effect of certified milk production is proportionately of far greater value to the community than the supplying of the very limited amount of certified milk and this aspect of the work by the commission should be ever borne in mind. It is a matter of current knowledge that in farming communities, where certified milk is being produced upon one or more

farms, there is a tendency to clean up upon many of the adjacent farms and there is the factor of imitation to a greater or lesser degree, both as to methods and equipment throughout that vicinity. In the Chicago district, where there are upward of a dozen certified milk producing plants, there is being spread the gospel of pure clean milk in a practical way to practical men.

The education of the medical profession to the value of a clinical milk is of no inconsiderable importance and when one considers the apathy with which the milk supply for the unfortunate baby, deprived of its natural aliment is so frequently considered, this demand for education of physicians who prescribe the feeding for these unfortunates is paramount.

Milk is milk, and to the house-wife the cream line is the gauge by which all qualities are measured. However, the possibility, yes, the practicability of the distribution of a safe, clean, wholesome milk, is gradually sifting into the minds of these housewives, and today in many communities there arises a demand for such a milk long before either the profession or commercial enterprise is prepared to supply a milk of certified grade.

Of no mean importance is the value of the milk commission to public health work. The stimulation of an active energetic milk commission upon the health officers of a community is indeed wholesome.

Certified milk is milk produced under the certification of a regularly appointed milk commission of a county medical society. This definition for this product has many advantages over a definition which embraces the working methods and standards of the A. A. of M. M. C. These methods and standards are subject to change from time to time as the knowledge of milk hygiene increases. Furthermore, from a protective point of view, this definition meets the conditions to the best advantage. In many states certified milk has received legal recognition by the enactment of laws by the several legislatures. The charter of the state of Illinois is such that the best legal advice which the Chicago Medical Society Milk Commission could obtain, gave as their opinion that any statute that would stand the test of law would be more harmful than beneficial to the cause; as the law governing such products declared that one could not go

*Read before the Section on Public Health and Hygiene, Illinois State Medical Society, May 19, 1915.

behind the container; milk must have standards, which apply only to the milk as delivered in the bottle or can. This product can only be protected under the laws appertaining to misbranding and the copyright laws.

The originators of certified milk contemplating this aspect had the term copyrighted under the ownership of the producer of certified milk to the Essex County Commission. By consent such copyright is extended to any regularly constituted milk commission. The value of this copyright has never been decided by a higher court, but it is of common accord believed to be entirely valueless. In the face of such conditions, the attorney for the Chicago Medical Society Milk Commission advised that the commission have an original design drawn and that a copyright of such be taken out and to secure further protection to have said meaningless design registered under the registration and trade-mark acts of Illinois and Wisconsin. Accordingly this was done. All the literature, bottle caps, etc., bear this insignia, so that today the public is educated to demand a bottle sealed with this label when purchasing certified milk.

Under the misbranding laws several courts of record have decided that certified milk had by usage become known and accepted as a milk for clinical purposes produced under the direction and supervision of a county medical society. The Chicago Medical Society Milk Commission is of the opinion that this is a better protection than any legal procedure could be even were it possible to have certified milk given a legal status by act of the legislature.

Certified milk is extra-legal. For it to remain in the high regard in which it is now held, it must always be in advance of legal ordinance.

There are but three milk commissions in Illinois and approximately seventy-five in the United States. In many communities there is developing a demand for a milk of the grade of certified. Where there is such a demand it is the duty of the county medical society to have such a milk furnished that the many babies, who of necessity, must be given artificial food, may have a clean, wholesome milk. In the development of such a demand there is of necessity a slow growth and in many cities and larger towns the production of a certified milk for a small growing demand would be at a considerable financial loss.

It would appear that this early loss to a very large extent could be obviated by temporarily receiving their supply from a neighboring commission. There are few places in which it would not be possible to deliver certified milk within twenty-four hours after milking.

In the establishment of a milk commission there should be a canvass made of the various charitable and uplift agencies to work up an atmosphere for such a propaganda. The many women's clubs welcome speakers upon this subject. The county medical society should establish a milk commission as one of its standing committees. The charter of the Chicago Medical Society Commission as expressed in the by-laws of that organization, is:

SECTION 7.—The Milk Commission, which shall be known as the Chicago Medical Society Milk Commission, shall be composed of seven members, the president of the Chicago Medical Society *ex-officio*, and six members, whose terms of office shall be three years, two to be elected annually by the council of the Chicago Medical Society to serve three years. At the annual meeting of the council in 1909 six members shall be chosen, two for a term of one year, two for a term of two years and two for a term of three years. The principal object of the commission shall be to secure a supply of pure and clean milk that can be relied upon for the feeding of infants and invalids, and for this purpose the commission shall certify to milk from any dairy which applies for certification when the milk is produced in accordance with the conditions imposed and equals the required standard. Intimately connected with this object is the dissemination of knowledge concerning the hygienic importance of a wholesome milk supply. To promote these objects the commission shall co-operate with the American Association of Medical Milk Commissions, and shall organize and make such rules for its guidance as may be necessary. It shall provide such stoppers, seals or labels as may be required to indicate and protect its certification. Besides the inspection of dairies and the examination of the milk produced, it shall take whatever other means may be necessary to promote its objects. It shall not contract any financial obligations without the consent of the trustees of the society, and its work shall be self-sustaining.

The number comprising the various commissions throughout the country varies from three to more than a hundred. The number should not be so great as to divide the burden infinitesimally nor should it be so small that the duties become too irksome.

Six is a good number. This allows for the appointing of the several committees, thus appor-

tioning each branch of the work to a special committee.

In the selection of the members of the commission two aspects should be borne in mind; one in having selected men of sufficient reputation in this especial field, who by their standing, will bring confidence and knowledge to the commission; also, there should be younger men who are willing to sacrifice their time and energy to furthering the interests of the commission.

The commission having been appointed by the county medical society, the commission should meet and effect an organization by the election of a chairman, secretary, treasurer and the following committees: sanitary inspection, veterinary inspection and tuberculin testing, bacterial and chemical examinations, medical inspection of dairy employes.

There should be appointed certain experts as consultants to the commission: consulting attorney, veterinarian, chemist, bacteriologist, sanitary expert.

In accepting the dairyman who offers to fulfill the requirements in the production of a certified milk, his individual fitness must be measured by certain standards. His integrity must be unquestioned; he must have sufficient intelligence with a vision which comprehends certified milk; he must be in sympathy with the production of a clinical milk and not have the milk industry secondary to other interests as the breeding of pure bred or the financial return; he must be clean in person, so inspiring cleanliness and respect in his employes.

In return for the demands of the milk commission he receives an increased price for his product and the support of the medical profession in marketing this commodity.

The duties of the commission are to enforce regulations of production and distribution; to make personal sanitary inspections; to provide competent sanitary and health inspectors; capable bacteriologists and chemists; qualified veterinarians; and to spread the gospel of certified milk.

Details of the administration embrace a regular meeting of the commission at a definite time and place at least once each month. A small proportion of the commission should constitute a quorum as the duties of a physician are such as to materially interfere with regular attendance.

The order of business should be, reading min-

utes of last meeting, report of secretary, report of treasurer, reports of committees. All reports should be made in writing and permanent files kept. There should be a sheet which gives the dates and records of each bacterial and chemical examination, each sanitary, veterinary, and health of employe inspection, also the tuberculin testing and water analysis of the individual farm. By so doing a glance at the sheet will disclose any delinquency in any of the departments.

It is of extreme importance that the production of certified milk be under the direction and supervision of the milk commission and no condition should be tolerated that could be interpreted into the assumption of an opposite condition of affairs. The commission must be judicial as well as educational. The commission must be in absolute control of all inspectors. It must not be possible for any question to arise as to who is the employer the commission or producer. All examiners, inspectors, veterinarians, etc., must be paid by the commission rather than the producer.

How shall the money to pay these expenses be assessed? Shall it be by a per bottle tax or by the simple spreading of the expenses on the farms? The Chicago Medical Society Milk Commission charges to each farm where practical the individual expense. This can easily be done for sanitary and veterinary inspections, also the chemical and bacteriological examinations. There are many other expenses as the general expense of administration, etc., which must be prorated. This is done on a per farm basis. It can readily be seen that this makes an unfair proportion to the small producer. Many commissions make a per bottle tax by selling the labels and caps at an advanced price to the producer. This is an equitable method and allows of no comment on the part of the producer as to the manner or price paid for the various activities.

The average cost of certification ranges from one-fifth of a cent to one cent per quart in the different commissions. With a commission producing approximately ten thousand quarts of certified milk per day as is done by the Chicago Medical Society Milk Commission, the per quart cost can readily be done at a low price.

Some commissions accept the work of city health officers for more or less of the details. The advisability of such procedure must be decided

according to the conditions in the municipality concerned. In a large city such a policy would be extremely hazardous.

The commission should become a member of the American Association of Medical Milk Commissions and should have for their contracts with the producers the working methods and standards of that association.

The working methods and standards are not definitely set rules mandatory upon all commissions but are the high standards toward which all commissions are striving for the production of certified milk under their certification.

These standards are made for the large and the small farms and in them will be found certain recommendations which the cost makes prohibitory to the small producer, but the essentials can and should be required of all producers. The Chicago Medical Society Milk Commission has these working methods and standards printed in contract form and such contracts in force at all farms under its jurisdiction.

The commission does not set the price for which this milk is sold, but the price must be such as to meet the approval of the commission if success is to be attained.

The Chicago Medical Society Milk Commission believes that the perpetuation of the certified milk industry demands that it be upon a commercial basis. There may be many men, with the zeal of new converts, who may agree to make such a product, but if the continuance of production entails a constant loss without hope in an ultimate financial return, the industry cannot attain that solidarity necessary for permanence.

In fixing the price three interests must be considered. First, the producer, who should have sufficient return over and above the price received for ordinary milk, to offset the extraordinary expense required for the production of certified milk; this including the wages of extra employes, more and better utensils, an overhead covering the interest on a greater investment in stock and equipment and cows removed from the milking herd by order of the commission's veterinarian. Second, the distributor is entitled to a greater spread between the cost and selling price than in commercial milk to cover the extra care demanded for the handling of the certified product. Third, the consumer is entitled to consideration because the price bears a definite rela-

tionship to the saleability of a product. Certified milk is considered in the class of philanthropies and the need of the infant must ever be a controlling factor. Milk is milk and as the laity has been educated to measure milk by the cream line, this extraordinary care and safety of the product are factors which are seldom given the consideration to which they are entitled.

The retail price of certified milk in the Chicago district is fifteen cents a quart.

The value of certified milk includes the object lesson of the production of a clean, safe, raw cow's milk at a cost within the reach of all. When this most excellent product is contrasted in cost with the exceptional productions of other foodstuffs, the comparison is all to the advantage of certified milk. All have seen the examples of the fruit growers' art in the display windows at prices far beyond the ability of the ordinary purchaser to pay; even in meats the difference in price between the inferior and superior cuts is greater than in milk. Certified milk is pre-eminently an infant and invalid food—a dependable food for the feeding of persons with delicate digestive apparatus.

The certified milk industry is entirely a voluntary organization from commission to consumer. The value lies not alone in the number of quarts sold per day nor the number of infants fed, but in the educational influence spread broadcast. It is the entering wedge in the pure food movement. It has demonstrated its ability to make good. It has raised the grade of all milks far above the fondest hopes of its originators.

The propaganda for certified milk: It is a special milk for a special purpose. It does not compete with market milk. In furthering the use of certified milk there is and should not be any attempt at climbing up by the pulling down of the commercial product. Certified milk sells itself by its own excellence and superiority.

The objects of the commission are: to produce a clean safe raw cow's milk for clinical purposes; to stimulate the clean milk movement; to educate the profession and laity to the advantages of their product.

The medical profession should support and encourage the milk commissions by recommending their product wherever milk is used as a beverage.

The milk commission should readily furnish the medical profession at all times full information of any and all details in the production and distribution of its product.

Certified milk is a dependable article of diet; it is the highest grade of milk possible to obtain. Certified milk is surrounded by all the safeguards practical to the production of a milk at a price within the reach of the majority.

MEDICAL INSPECTION OF EMPLOYES ON CERTIFIED FARMS.*

GRACE H. CAMPBELL, M. D.,
CHICAGO, ILL.

Chicago Medical Society Milk Commission.

Within the last few years increasing attention is being given to milk and its relation to public health. Milk is used to a greater extent in this, than any other country. It is one of the most important articles of food. About 16 per cent of the average American diet consists of milk or milk products. Milk contains all the essentials of a perfect diet. Because of this and its facility of ingestion and being so easily digested it is one of the most important foods for infants and invalids. Milk is of great importance as a substitute for mother's milk in infant feeding; it is well understood that those most dependent on milk as their sole food constitute that part of the community which suffers the greatest injury from use of milk impaired of its nutritive content. Improved living conditions have greatly decreased the mortality in most countries; unfortunately, however, this does not apply to infants under one year of age. It is for this reason and many others that the question of a clean, safe milk and its relation to public health is worthy of best efforts.

That milk may play a part in the spread of certain diseases has for many years been appreciated. From present knowledge the most important of these are, tuberculosis, typhoid fever, scarlet fever, diphtheria and tonsillitis. It is believed by many that the tubercle bacilli are in a majority of cases derived from the cow, others believe that they may come from human sources. Typhoid bacilli in milk are always derived from human sources. The contagion of true scarlet

fever is believed by some to be transmitted through milk and considered as always coming from man. Diphtheria bacilli when found in milk are regarded as being of human origin.

The streptococci exciting tonsillitis are thought to be derived both from cases of septic inflammation of the udder of the cow, and from human sources.

Physicians recognizing the dangers in the contamination of milk and the great need that it should always be clean and wholesome, have organized medical milk commissions in most of the larger cities of the United States. There are many requirements to be met by the owner of each farm in the production of certified milk. One of the most important of these requirements is the medical inspection of all employes. Of the eighty-one requirements of the contract between the producer and the commission, nine are in regard to health of employes, but these nine items are only a small part of the amount of work that is being done to further safeguard certified milk.

To the late Dr. Julia D. Merrill, who was a member of the Chicago Medical Society Milk Commission for six years and was a member at the time of her death one year ago, belongs the credit of having established and enforced medical inspection of all employes upon all farms under certification by the Chicago Medical Society Milk Commission.

Strict medical inspection of employes on certified farms was put into force in November, 1912, and since then every employe on each farm who comes in contact with cow, or milk or utensils has been medically examined at least once a month, except this last winter when the epidemic of foot and mouth disease prevented regular examinations. During this epidemic all certified farms were under rigid quarantine. During these months of the quarantine of the farms postal card reports were made regularly by each producer to the commission, as to the health of all employes and of the existence of contagious diseases, if there were any, in the neighborhood of each farm.

Several months ago the work of medical supervision of employes on certified farms was extended to include a complete physical examination of each new applicant for employment on certified farms.

*Read before the Section on Public Health and Hygiene, Illinois State Medical Society, May 19, 1915.

In the locality of each certified farm a reputable practicing physician has been appointed by the commission to examine all new applicants. Every new applicant is questioned as to having had any recent illness or having had diphtheria, typhoid fever, or frequent tonsillitis. No person is employed who has not been vaccinated. It is ascertained whether the applicant has been in contact with any persons suffering with any disease and whether it was contagious. Each must be examined for any disease of the eyes and of the skin of the face, neck, arms, hands, and the condition of the finger nails. A careful physical examination is made for signs or symptoms of tuberculosis, either pulmonary or glandular. No one who upon examination is found to have a sore throat or to show signs of conjunctivitis, tuberculosis, syphilis or venereal disease, any suppurative process, or other diseases of an infectious or contagious character is considered for employment.

A card index of every employe on each farm is kept; the points recorded include twenty-seven questions and answers and the findings of the primary physical examination. A separate card index is kept of the medical examinations which are made each month. There are ten items included in this examination: the date is recorded, temperature and pulse are carefully taken, a close inspection of the eyes, the skin of the face, neck, arms, hands, and especially the throat is examined. Excepting tobacco throats, cultures are taken from every throat that shows any hyperemia or that looks the least suspicious. This rule of taking cultures is strictly adhered to.

When employes live upon the premises their dormitories are sanitary as to location and construction. A separate bed kept supplied with clean bed clothes is provided for each. Proper bathing facilities are also provided. In addition to the ordinary habits of personal cleanliness milkers are provided with clean white suits and caps daily, to be worn while milking. The careful washing of the hands before milking each cow is another requirement. On some of the farms individual towels are provided to be used once only, where these are not provided, sanitary paper towels are supplied in abundance.

Each producer is required by his contract with the commission to report immediately to the com-

mission any illness whatsoever of employes or of other residents on the farm.

The commission has arranged with a bacteriologist of recognized ability to examine all cultures taken from employes for purpose of diagnosis. Culture tubes are provided on each farm and the superintendents on each farm are instructed how to take cultures, and in the event of any illness of a suspicious nature such employes shall be quarantined, the attending physician shall be called and a culture sent at once to the bacteriologist approved by the commission.

Since November, 1912, seven hundred and seventy-five primary medical examinations have been made of employes on certified farms. Two hundred and ninety-seven or 38 per cent. of this number are of foreign birth, of this number besides American born, twenty-one nationalities are represented, viz.:

Germany	52	Norway	8
England	32	Hungary	8
Holland	31	Scotland	4
Sweden	30	Poland	4
Denmark	30	Belgium	2
Russia	24	Bohemia	1
Wales	21	Servia	1
Ireland	21	Turkey	1
Austria	13	Roumania	1
Switzerland	10	Japan	4

There have been one thousand nine hundred and seventy-five medical examinations made beside the 775 primary examinations since the work of medical supervision has been in force. There have been three hundred and fifteen throat cultures taken; the results of the examination of these are as follows:

Staphylococci	222
Pneumococci	139
Micrococci catarrhalis.....	27
Saprophytic bacilli.....	18
Streptococci	13
Suspicious cultures.....	4
Diplococci	3
Pseudo diphtheria bacilli.....	2
Mouth bacilli.....	2
Spore bacilli	1
Fusiform bacilli.....	1
Various micro-organisms.....	2

Of the thirteen cultures that showed streptococci, two pseudo diphtheria, and the four suspicious, a second medical examination was made at once and cultures taken again which in each case were found negative, but as a precaution all

employees on that farm were instructed to use a mild antiseptic gargle just before each milking.

Considering that this was new work and that it incurred added expense to the producers, each and every one has responded to this work, and have co-operated heartily in every possible way, and have done, and are doing everything in their power to safeguard certified milk and to produce a milk that is beyond suspicion.

At no time since the first Medical Milk Commission was established has there been a case of either a contagious or communicable disease been traced to the use of certified milk. No case of tuberculosis has ever been traced to a certified milk farm. No epidemic of scarlet fever, measles, diphtheria, or streptococci sore throat has ever been traced to a certified milk farm.

The question of securing competent and efficient employees, the education and mentality of each, is a very serious problem to be met by the producer, for the average length of time that any employe remains on one farm is not over two months; on some of the farms, however, there still remain a few employees who were there from the beginning of the production of certified milk on that farm.

During the time that **medical examination** have been made regularly the number of employees found necessary to remove from contact with the care or handling of certified milk have been very few. There have been no cases of the commoner infectious fevers found among employees on any certified farm.

The educational value of regular medical examinations has also had a very beneficial effect on each and every employe, with decided improvement in their personal cleanliness, knowing they were to be examined each month and oftener if necessary.

All of the producers have signified their approval of this work and believe that the primary physical examinations and the regular medical examinations made each month have done much to uplift the moral status of each employe.

In a few instances where new employees have refused medical examination, these employees have either been discharged at once or immediately removed from that part of the farm which would bring them in contact in any way with the care or the handling of the certified milk.

In October, 1913, a driver on one of the cer-

tified farms who was not in any way connected with the certified milk, who had been employed on this farm for three years and had not been away from the farm for several months, except to haul freight to and from the railroad station, which was about two and a half miles from the farm, was taken sick and a positive diagnosis was made of typhoid fever by the best known scientific methods; however, he had been removed to a hospital several days before the report of a positive diagnosis was made. For the four weeks following daily medical examinations were made of all employees on this farm, repeated analyses of the water and every other source from which contamination might have come, were all negative. There were no contact cases, no suspicious cases of typhoid fever removed from the farm and there has been no recurrence since on this or on any other certified farm.

Just a year ago in another locality near where four certified farms are located, an epidemic of diphtheria developed to an alarming extent. The public schools in this town were closed for weeks and all public meetings were abandoned, the nearest farm to this town is two miles. An enormous amount of work was done at this time. Employees on the certified farms in this locality were forbidden to leave the premises; no visitors were allowed; medical examinations were made each day of all employees, cultures were taken daily of each employe, results of which were all negative in every case. Every one that came in contact with cows or utensils or milk were required to gargle with a mild antiseptic just before milking, this precaution and every other possible antiseptic precaution was taken to protect certified milk.

At the outset of the epidemic of foot and mouth disease and knowing this disease was communicable from the lower animals to human, the Chicago Medical Society Milk Commission instituted certain restrictions as to the conduct of certified milk production during this epidemic. Each farm was notified that any employe who left the farm was not allowed to return, except the man who delivered the milk to the railroad station, and he, upon his return daily, was to immediately take an antiseptic bath and make an entire change of clothing, the wagon wheels were to be run through a solution of carbolic acid, the horses' hoofs and shoes carefully cleaned and

washed with an antiseptic solution. All dogs, cats and pigeons were to be killed or confined, any stray animals coming onto the farm were to be killed at once. No visitors or peddlars were to be allowed on the premises.

The bottles and crates when received at the farm were to be immediately immersed in a solution of the chloride of lime and the wagon sprayed with the same solution.

If an outbreak of foot and mouth disease occurred within a radius of five miles of any certified milk farm, all the milk from that farm was pasteurized at a temperature of 155 degrees F., for thirty minutes and until the quarantine was removed from the infected farm.

Medical safety means the conservation of health, it is preventive medicine, not curative. To stamp out an epidemic is to some a far more notable achievement than to prevent its occurrence. If a child should be scalded to death in boiling milk the incident would have the elements of human interest, but when disease carries away thousands, nothing happens. The efforts of prevention are obscure and negative, but the results of cure are evident and positive.

Direct evidence in the safeguarding of the certified milk supply in Chicago to its consumers is wanting, but this must not be interpreted as a reason for withdrawing regular medical examinations of employes on certified farms, but rather encourage us to even more rigidly enforce every rule that will help us to further safeguard certified milk.

The regular examinations of all employes on the farms producing certified milk has an immediate effect by keeping frequently and prominently before each employe the possibility of infection being conveyed by milk through infectious material.

Certified milk should have health examinations and inspections because in paying the extra price for an extra product, the consumers are entitled to and have a right to demand, that protection which medical supervision of employes gives.

In the propaganda of certified milk emphasis is laid on the safety of its production. Knowing the public have been educated to believe that such practical safeguards do surround its production, the milk commission for self protection should insist on such regular medical examinations and inspections, but they do not positively guarantee

that no communicable disease will be transmitted by its product.

However, should such an accident occur evidence of regular medical examinations would go far in preserving the good name of certified milk. As yet no epidemic has developed on any certified farm, but the commission are on the alert and wide awake to the situation that the necessity may come at any time to act quickly and at once should such an unfortunate accident occur; in case an epidemic should develop on any farm, shipment of milk from that farm would be stopped at once, and not resumed until every scientific measure had been exhausted in the cleaning up of that farm and not until all danger of further infection had been eradicated.

Finally, in the campaign for pure milk every agency is necessary and above all the medical profession. Education is the main spoke in the wheel of the milk wagon. Education is the keynote in the campaign for clean milk.

The certified milk movement has been and is a medical movement. The medical idea is the controlling factor. The medical profession for self defense if for no other reason should be familiar with certified milk, its production and its uses. Physicians should know whether it is a good thing or not: if it is a good thing then the profession should be active in its propaganda.

3301 Washington boulevard.

Note: Discussion appears in the Section Proceedings.

THE DOCTOR'S OPPORTUNITY TO CONSERVE THE HEALTH OF THE PEOPLE.*

JOHN A. ROBISON, M. D.,
CHICAGO.

President Illinois State Board of Health.

Conservation is the most important topic of the hour. The nation is endeavoring to conserve the forests, the land, the food supplies, and, the most valuable asset of all, the lives of the people. In the conservation of the health and lives of the people there should be hearty co-operation between the local and state boards of health, and the rank and file of the medical profession. And it is my object today to point out some methods in which the doctors can co-operate in this work.

*Read before the Section on Public Health and Hygiene, Illinois State Medical Society, May 19, 1915.

This work begins with birth and is carried on in its varied activities through the span of life.

Ophthalmia Neonatorum. This is a reportable disease, and one easily prevented if physicians and midwives will use the preventive measures immediately on the birth of the child. The State Board of Health provides a one per cent solution of nitrate of silver in a form easily applied, and its prompt and general usage will prevent blindness.

Diarrheal Diseases of Infants. Less than a quarter of a century ago the mortality among infants was appalling. But the work of the conserving of infants' lives has not only progressed through the efforts of the medical profession, but through the interest of the laity, as is evidenced by the work of such organizations as the Infant Welfare Society. The educational propaganda of the causes and prevention of infantile diseases has borne good fruit, and the doctor has an abundant opportunity to be instrumental in the saving of the lives of the children. The problem of the greatest importance is the food question, especially the supplying of pure milk, and how the infant and child should be nourished. The physician should carefully investigate the source of food supply, and the manner of the distribution of the same, in all cases of infants not breast-fed who become ill through improper feeding. The doctor should carry on private dairy inspections, and if insanitary conditions are found, the local board of health should be notified, and in case it will not act the State Board of Health should be informed. Such activity on the part of the doctor will not be interpreted as meddling by the community, but he will be applauded as a benefactor and a conservator of human lives.

Diseases of Childhood. This is the period of life when the child is exposed to a multiplicity of infections and contagious diseases. Many of these diseases are the result of hereditary tendencies, many are due to environment and ignorance, poverty, poor housing, and criminal conditions. The eradication of disease at this period of life often means a profound study of the sociological conditions, an awakening of the community conscience, and the education of the people. Here is where community co-operation, such as has been described by Dr. Ruediger, secures the greatest efficiency in the prevention

of disease. It secures not only greater control of existing disease, but stimulates community effort to change conditions which predispose to disease.

And the physician's duty to his clientele, his community and himself, is to be active as an educator and lead the campaign for the prevention of communicable diseases. He should insist on the efficacy of vaccination against smallpox, the use of antitoxin in diphtheria, and the prophylaxis of antityphoid vaccine.

The physician should carry out strictly quarantine in quarantinable diseases, and the community would soon realize its value and the economic gain which results from strict quarantine.

And, in order that health authorities may know when it is necessary to maintain quarantine, it is absolutely essential that physicians shall co-operate with them by promptly reporting all quarantinable diseases. It is impossible to effectively control tuberculosis, typhoid fever, scarlet fever, industrial lead poisoning, or any other preventable disease, without a knowledge of the occurrence of the cases. The degree of perfection regarding the notification of disease in any community may be taken as an index of the honesty of the doctors, the intelligence of the community and the efficiency of the health administration. A physician who does not obey the law requiring the notification of reportable diseases is not a law-abiding citizen. He, also, is not affording his families that protection against disease which they reasonably expect of him, as it is his duty to protect his clientele against disease, as well as cure existing disease. When he takes care of a case of diphtheria, scarlet fever, or measles, he is at the same time rendering a service to the public in preventing the spread of the infection. The time has arrived when the medical man must realize that his proper function is to *prevent* rather than cure disease. His duties are rapidly becoming more largely official, in the sense that his services are rendered to the community and not exclusively to the individual.

The State Board of Health diagnostic laboratory does not desire to supplant the physician in the diagnosis of infectious or contagious diseases, but wishes to be considered as a consultant, willing to gratuitously serve the physician and secure

an early and accurate diagnosis in cases which are in doubt and might not be properly recorded.

The Practitioner as a Sanitarian. The family physician can conserve the lives of his families by departing from the routine treatment of disease and study the etiology and prevention of disease. As already suggested, this involves sociological work, the study of housing conditions, the influence of occupations, the physical defects of individuals, and the school conditions. It means an inspection of private and public premises, the abolition of filth, the breeding places of flies, mosquitoes or other disease-bearing insects. It means the establishment of open-air schools for backward children, the establishment of sanatoria for tuberculosis, of colonies for epileptics, schools for feeble-minded and delinquent children. It means the broadening of the field of medical endeavor, and a change in the economic conditions in the practice of medicine. In other words, the public will soon have to learn that the physician must be paid a retainer fee for the advice: "How to Keep Well," and that hospital positions, state county and municipal, must be salaried positions and not positions filled for the sake of clinical experience.

After the period of childhood is passed, then occupational diseases enter into consideration. In the Illinois law industries in which sugar of lead, lead chromate, litharge, red lead, or arsenate of lead are used or handled in any way, and industries engaged in the manufacture of brass or smelting of lead or zinc are declared to be especially dangerous to the health of the employees. Systematic inspection of such employees is required by law, and when any disease is found of an occupational character, it must be reported to the secretary of the State Board of Health, who will immediately notify the department of factory inspection. But factories are beginning to realize the value of medical inspection of their employees, and the fact that great efficiency cannot be secured from employees who are physically unfit. The result is that large manufacturing firms are employing physicians to look after the physical well-being of their employees, and such arrangements not only pay dividends to the firms, but are of great value to their employees and their families.

Rural Sanitation. It is in the rural districts that physicians can be of the greatest value in

instituting needed sanitary conditions. In towns and cities the inhabitants receive more or less protection from the local boards of health, and the village and city laws are so framed as to compel the observance of precautionary measures. But in the country free clinics, district nursing and hospital advantages are rare. If one wishes to investigate the health conditions, let him visit a number of small farms and observe under what conditions milk and other food is kept. Notice the toilet facilities and how flies may infect the fresh milk and other food with human feces; how poor the ventilation is, and so forth. Notwithstanding the abundance of fresh air, the farmers nearly always sleep with closed windows and the rooms of the house are closed to sunshine and fresh air. The sanitation of rural schools, churches and public buildings and halls is generally a disgrace to twentieth century intelligence. Every physician who practices in the country could do effective work in undertaking to improve the sanitary conditions of the farms within a radius of ten miles of his home. He could advise the farmer as to the proper location of his well, barns and out-houses, not only as a matter of economical convenience, but as a prevention to the spread of disease. A rural district nurse, under the guidance of the medical profession, can do inestimable good to a community, and if such officers were liberally endorsed it would not be necessary to give so much money to hospitals, as there would be less necessity for curative institutions. Each man's home is as he desires to make it, and it is only when enlightenment controls a community that each householder is filled with an ambition to live better. There are many deaths in rural communities from typhoid, malaria, smallpox, measles, scarlet fever, whooping cough, diphtheria, influenza, tuberculosis, pneumonia and diarrheal diseases which need not occur if proper sanitation was enforced.

It certainly looks reasonable that as much money should be expended in instructing the dwellers in rural communities how to raise their own children and to protect themselves against infectious diseases as how to raise pigs and how to breed cattle and horses.

If we should enter into detail how the physician may be instrumental in carrying into effect these sanitary reforms, this paper would become

a volume, but enough has been hinted to arouse a lengthy discussion, if we have the interest in the subject that its importance demands.

CO-OPERATION IN PUBLIC HEALTH WORK BY NEIGHBORING SMALL CITIES.*

GUSTAVE F. RUEDIGER, M. D.,

Director Hygienic Institute for La Salle, Peru and Oglesby,
Illinois.

LA SALLE, ILLINOIS.

The primary object of every health department is prevention of disease. Many people regard this as a simple task, but when we stop to consider the numerous sources and modes of infection and the remarkable advances that have been made in sanitary science during the last three decades, it soon becomes evident that the well-trained public health official must have at his command a diversity of scientific knowledge such as is required of scarcely any other individual. He must first of all be a capable and fearless administrative officer as he is responsible to the people for the enforcement of all health regulations and the proper keeping of records pertaining to his official acts. He must be thoroughly familiar with vital statistics because they are the final test of the efficiency of his work. Moreover, he must have a working knowledge of epidemiology, bacteriology, analytical chemistry, sanitary engineering, sanitary inspection of foods and dairies and often of medical inspection of school children and visiting nursing.

It is very evident from this brief enumeration that it is not possible for any one individual to completely master all of these branches of public health practice and it is in most cases not necessary that he should. In every up-to-date health department in our large cities these various branches are each in charge of a specialist. This fact, however, does not relieve the chief health officer of any of his responsibility and it is essential that he should know enough about bacteriology and analytical chemistry to make a correct interpretation of the results obtained by his analyst. He must also have sufficient knowledge of sanitary engineering to be able to give sound advice regarding the source and purification of the public water supply, and the most

sanitary and most economic method of disposing of the community's sewage, garbage and other refuse. It is no longer possible to have a health department that is efficient in all the various activities that are essential to the successful protection of the health of the community unless we can put this work in charge of trained experts who can give all of their time to it and are willing to make public health practice their life work. The majority of our small town health departments are deplorably inactive and inefficient, partly on account of lack of financial support but in large part also because they are in charge of a health officer who has no special training in sanitary science and cares more for his private medical practice than for public health matters. Such a health officer, besides being poorly equipped for this important work, is often unsuited for the position because he allows his personal interests to interfere with his official duties out of fear of making enemies and losing the prospects of being called upon for professional services.

The average small-town health officer of this type rarely undertakes any official duties beyond putting up quarantine cards as occasion demands and serving notices on residents to have their privy vaults cleaned, after the neighbors have complained many times. They rarely undertake to make a careful investigation of all circumstances that may have a bearing on a case of contagious disease in the hope of finding the source of infection and stopping it. If others are infected from the same source they likewise have their homes placarded and the matter is allowed to go on until it comes to a standstill of its own accord or results in a fair-sized epidemic. Placarding the house is usually an important measure but it does not suffice when the new cases are caused by the periodic infection of a milk supply, or of some other foods, by a bacillus carrier. In case of an epidemic of diphtheria or scarlet fever the next step generally taken is to close the schools and again allow things to follow their own course. This step, however, is rarely necessary because better results can be obtained in other ways, but it has some points in its favor. It does not throw any additional labor on the health officer and it is likely to give him the feeling of having done his duty, and, in most instances, I don't doubt

*Read before the Section on Public Health and Hygiene, Illinois State Medical Society, May 19, 1915.

but that he has. If a community refuses to pay its health officer more than one hundred and fifty or two hundred dollars a year for the services then they can hardly expect him to spend much time in making daily inspections of the school children or making an extensive epidemiologic investigation, which may require the taking of many dozens of throat cultures to run down a diphtheria carrier or a mild but unrecognized case of this disease.

Too frequently the poorly trained health officer when confronted with several cases of typhoid fever, thinks of nothing to do to throw light upon the source of infection except to send several samples of well water and, perhaps, a sample of milk to the nearest bacteriological laboratory with a request that they be "analysed for typhoid bacilli." More than once have I had a bottle of milk sent to me with that request when upon investigation it was found that the one patient in the family had, prior to being taken sick, done the milking and had cared for all the milk used in the household—a circumstance which at once excludes the milk supply as the source of infection. There are, however, some health officers who still work on the assumption that dairy cows will occasionally secrete typhoid-infected milk. Such a person surely "is up against it" when he attempts to ferret out the source of infection in a typhoid epidemic that confronts him.

Enough has been said to show that in the average small community public health work is no farther advanced today than it was twenty-five years ago, and as far as affecting the public health of these people is concerned, progress in sanitary science might as well have been interrupted three decades ago. In many of the large cities, and in a few exceptional small communities, where properly trained experts have charge of this work, practically everything known to science is brought into service in preventing disease and checking epidemics in their inception. As a result we find that many preventable diseases are more prevalent in the small cities than in the large ones, although the problems are much alike in both places with, perhaps, some advantage on the side of the small community.

To remedy this unsatisfactory condition it is necessary, first of all, to get more specially trained full-time health officers into the service.

In order to accomplish this it will be necessary to pay the health officer a living salary and insist that he devote all of his time to the work; take the position out of local politics, remove the restriction of residence in the community prior to appointment and provide sufficient financial support to equip and maintain an analytical laboratory and hire the necessary assistants.

At first thought this fundamental change in the handling of local public health matters in the small communities may appear to be a hopeless task, but it can be brought about in exactly the same manner in which we have solved the high school problem in these communities, namely, by co-operation of neighboring municipalities. For obvious reasons we cannot hope to have a first-class health department with its various specialists in every city of two thousand to ten thousand inhabitants, but if four or five such municipalities agreed to co-operate they would have no difficulty in maintaining such a department. We need a law in Illinois authorizing such co-operation. The law should provide for a board of health in the district composed of two or three members from each of the co-operating cities, to be appointed by the mayor for terms of five years. The board must be a continuous one and not one which goes out of existence with every change of administration, which is accomplished by making the appointments in such a manner that only one member from each city retires in any one year. The board must appoint the chief health officer who should be the executive officer of the board and hold office until removed by the board for cause. Other appointments are made by the board with the advice of the chief health officer just as instructors are appointed in a high school. I can see no reason why the guardian of the health of the people, any more than the high school principal, should be dragged into local politics or be a voter in the community prior to assuming office. In fact, there is every reason to believe that an outsider brought in is likely to be more impartial and hence more successful than a local man.

The minimum requirements for such a co-operative health department will vary somewhat with the scope of the work that is to be undertaken. Under average conditions, where from 20,000 to 30,000 inhabitants are to be served, the

following staff will be found necessary: A chief health officer with special training in sanitary science and public health practice and a knowledge of medical inspection of school children; an expert bacteriologist and chemist who must be provided with a properly equipped laboratory for doing ordinary bacteriologic diagnostic work and making sanitary chemical analyses of water, milk and foods; a milk and dairy inspector; a sanitary inspector for the inspection of grocery stores, meat markets, restaurants, streets and alleys; one or two school nurses and an office girl and stenographer. Under certain circumstances the duties of the office girl might be combined with those of the bacteriologist. The chief health officer, in my opinion, should be a graduate in medicine but he should not be permitted to engage in its practice. The office equipment should consist of desks, filing cases with properly printed record cards, a typewriter, book shelves and a set of standard reference books. As the chief health officer and the food and dairy inspector have to do a considerable amount of traveling from place to place it is necessary to include one or two small automobiles in the initial equipment. The minimum financial support must be equivalent to from 40 to 50 cents per capita in the district served.

To my knowledge only two successful experiments have been reported in this field, which is probably due to the fact that there are almost insurmountable difficulties standing in the way of affecting such an organization. These difficulties arise chiefly out of petty local jealousies. The first of these experiments was carried out about two years ago at Wellesley, Massachusetts, under the leadership of Prof. Earl B. Phelps (Public Health Reports, Sept. 25, 1914), then of the Massachusetts Institute of Technology. In this experiment the following eight communities had agreed to co-operate, namely: Wellesley, Belmont, Framington, Weston, Needham, Melrose, Canton and Winchester, but the last three came in for dairy inspection only. The second experiment in this field is the one about to be described from La Salle, Peru and Oglesby, Illinois. In this experiment we are at present serving only three municipalities which are situated closely together, and our central health department has entirely replaced the old boards of health. There is one fundamental difference

between our work and that in Massachusetts in that ours is supported entirely by a private donation. The scope of our work also is somewhat broader in that we are carrying out medical inspection of the school children and infant welfare work, and aim to give ample time to the chief health officer and the bacteriologist for original research.

La Salle, Peru and Oglesby are three small industrial communities with a joint population of approximately 28,000 people consisting largely of laboring people of foreign extraction, chiefly Poles, Austrians, Italians, Lithuanians, Irish and Germans. They are employed chiefly in coal mines, zinc works, cement works, a clock factory, a wheel and plow factory, and nickel-plating works. Many of them are almost illiterate and it is difficult to interest them in sanitation, civic cleanliness and civic pride. The housewives see no harm in throwing dishwater and other kitchen refuse out of the second-story window or back door and leaving it there for flies and rats to feed upon. Very dilapidated, unscreened outdoor privies were found in practically every block and manure piles were almost everywhere in evidence. It is needless to say that many of the alleys were in a filthy condition. Quarantine regulations were lax and difficult to enforce and the community never was free from contagion. Epidemics of scarlet fever, diphtheria and smallpox were of frequent occurrence and in a recent epidemic of smallpox many patients openly walked the streets in defiance of the health authorities.

La Salle had a fairly good milk ordinance but nothing was done under it except to collect the license fee and make a butter fat test once a month. Peru and Oglesby had no milk ordinance and none of the health departments made any bacteria counts of milk or inspected any dairies.

It was perfectly evident to many residents that a more efficient health department was needed, but as the cities had only a small fund available for health work, it was difficult to find a satisfactory solution of the problem. Moreover, the old health departments had nobody on their staffs with special training in sanitary science and hence did not have the confidence of the people which is so essential in bringing about a reform. Early in 1913, Mr. F. W. Matthiessen, with the advice of his son-in-law, Dr. Phillip S. Chancellor,

made a proposition to establish a co-operative health department for La Salle, Peru and Oglesby, with headquarters in La Salle, and supported by a private donation from Mr. Matthiessen. After a conference with the present director, the following plan of organization and operation was drawn up and submitted to each of the three city councils, in October, 1913, for acceptance: The plan provided for the establishment of a Hygienic Institute in La Salle, under the general guidance of a director who was to be selected by Mr. Matthiessen and Dr. Chancellor. At the Institute were to be maintained properly furnished offices with filing cabinets and printed blanks for keeping records and a completely equipped laboratory for making bacteriologic diagnoses and sanitary chemical analyses of waters and foods. The director of the Hygienic Institute was to be accepted by each of the three cities as their chief health officer or health commissioner; but in order to give this organization a legal standing, it was necessary that the mayor and city council in each of the three cities should appoint an assistant health officer who is a resident of the city in which he serves.

In order to keep these appointments out of politics as much as possible the director of the Institute is given the right of nomination of the appointees. It is understood that these assistant health officers shall work under the direction of the director of the Institute, but we have no written agreement to that effect. This co-operation is secured, however, by virtue of the fact that they draw their salaries from the Hygienic Institute, the funds of which are controlled by its director. The director has a three years' contract with Mr. Matthiessen which gives him rather full control of the Institute, and the city ordinances give him full charge of the health department. He is empowered to select his staff of assistants which at present consists of a bacteriologist, a school nurse, an infant welfare nurse, a dairy inspector, a stenographer and bookkeeper, a laboratory helper and the three assistant health officers just referred to. Everybody on this staff draws his salary from the fund given by Mr. Matthiessen.

Our plan provided further that each of the three municipalities shall engage a sanitary policeman, who is to work under the direction of the health commissioner, but shall be paid by

the city. The cities were also to provide for the collection and disposal of garbage and to adopt a more up-to-date sanitary code which would embody recommendations made by the director of the Hygienic Institute.

For the three assistant health officers, who are medical practitioners and give only a part of their time to this work, were selected Dr. B. E. Fahrney, La Salle; Dr. O. C. Yoder, Peru, and Dr. R. G. Cressman, Oglesby. They act in the capacity of medical inspectors and are virtually in charge of the contagious diseases in their respective districts, including the public schools, which they are expected to visit at frequent intervals. All contagious diseases are, however, reported to the central office. Physical examinations of the school children are carried out from the central office by the director, the bacteriologist and assistant director (Dr. Edward Hatton) and the school nurse.

The general plan outlined was accepted in October, 1913; the new ordinances were passed in April, 1914, and the new health department took charge on May 15, 1914.

In formulating our plan of organization of the Hygienic Institute and the co-operative health department, economy of operation was not the paramount consideration. The first thing sought after was efficiency in public health administration, but those who advanced the project were desirous that original research should also be provided for. We, therefore, aimed to have assistants enough to allow the director and the bacteriologist to devote considerable time to this important side of the work. Mr. Matthiessen's donation in support of this work was as follows: Twelve thousand dollars for a suitable building for offices and laboratory, five thousand dollars for laboratory equipment and office fixtures, and sixteen thousand three hundred and fifty dollars annually for salaries and maintenance.

SUMMARY OF FIRST YEAR'S WORK.

When the co-operative health department began its activity there were a number of cases of scarlet fever and diphtheria in La Salle, Peru and Oglesby and a few cases of smallpox in La Salle. It was found to be almost impossible to enforce quarantine regulations unless a watchman was stationed at every house under quarantine, which was impossible for financial reasons. Moreover, all mild cases were kept concealed

and often were not discovered until after convalescence was well advanced, or in cases of scarlet fever, until the patient began to show signs of edema from a nephritis. In the face of these difficulties practically no progress was made during the first six months in stamping out contagious diseases and we had a good sized epidemic of scarlet fever in La Salle in July and August and an epidemic of diphtheria in October, and one in Peru in November.

The scarlet fever epidemic was spread exclusively by contact as we were able to gather positive evidence in nearly every case that the child had been exposed. Most of these exposures were brought about by the parents with a full knowledge of what they were doing because they persisted in visiting the homes of friends under quarantine and often took their own children along. The epidemic was finally checked by putting on more watchmen to stop this visiting. The diphtheria epidemic in La Salle was spread by improperly washed milk bottles and was checked by getting that particular dairyman to steam sterilize his bottles before refilling. Over 65 per cent. of the cases were on this milk route; they were widely scattered and in families of all social stations, which made it seem very improbable that direct contact had anything to do with the epidemic. The epidemic in Peru occurred in one of the public schools and was handled by Drs. Edward Hatton and O. C. Yoder. It seemed to originate from a pupil who had been readmitted after convalescence, but was later found to be still harboring diphtheria bacilli in his nose. The entire room was cultured, eighteen carriers were found and excluded, the woodwork was disinfected with a liquid disinfectant and thus the epidemic was brought to an abrupt close, with the loss of only two days of school work.

These diphtheria epidemics got a good start because many of the cases were so mild as not to require the services of a physician. The services of the school inspectors and especially those of the school nurse were of inestimable value in both epidemics because many mild cases were found by visiting the homes and taking cultures. All children who had been treated for tonsillitis or had been absent on account of sore throat were refused readmission into school until a negative culture was obtained, and by this pre-

caution several new epidemics were averted. It is our custom now to require two negative cultures from both nose and throat before quarantine is raised. School children are then excluded for several days longer and when they come back to school the nurse takes another culture and sends them home for the day. Nose cultures are most important as we found very many negative cultures from the throat with the nose still positive, but in most of these cases there was a periodic reinfection of the throat. A single negative culture for release is practically worthless. At least two or three on consecutive days must be obtained to be reliable. All of our release cultures are taken by a member of the health department.

All public schools are visited daily either by the school nurse or by one of the assistant health commissioners, for the purpose of detecting contagious diseases, skin diseases, pediculosis, uncleanliness and marked eye defects. Children are also subjected to a partial physical examination once every two years. These examinations are made chiefly by the bacteriologist, who is a graduate in medicine, the school nurse, and the director of the institute, and include tests for defective sight, hearing and nasal breathing, and examinations of teeth, tonsils, cervical glands, hair, etc., but not examinations of the chest and abdomen.

As the alleys in La Salle and Oglesby were in a very filthy condition, much time and energy were devoted to them. There were practically no garbage cans in use in Oglesby and very few water-tight covered cans in La Salle. In La Salle the blocks are laid out with a vacant space, about 75 feet square, in the center and these squares have for years been used as public dumping grounds. The new city ordinance forbids the throwing of animal and vegetable matter into any street or alley, open or enclosed public or private place, and requires kitchen garbage to be kept in water-tight, covered garbage cans. The custom of throwing all refuse into the alleys and these vacant squares was so firmly established that a considerable number of arrests were necessary before any improvement could be noticed. Considerable improvement with respect to garbage has been obtained during the year, but many families still use old wash tubs, barrels and wooden boxes, but we hope to do away with

these during the coming summer. In Oglesby also a great improvement is noticeable in the alleys and backyards, owing chiefly to the activity of the sanitary policeman. In Peru the alleys were in a better condition and are now being kept quite clean. Garbage is hauled away at least once a week in the residence districts of each of our three cities, and oftener from hotels, restaurants and boarding houses.

The milk supplies came in for their share of attention and all dairies are being systematically inspected and scored and the cows tuberculin tested. About four hundred cows have been tested, and showed approximately 27 per cent of reactors. A number of the reactors were immediately slaughtered and among them were found several with generalized tuberculosis and one with several softened nodules in the udder. All that were slaughtered under inspection were found to be tuberculous. In La Salle and Oglesby practically all milk is now being delivered in sterilized bottles and about two-thirds of the supply in La Salle is pasteurized. In Peru only about one-third of the total supply is delivered in bottles as the city council refused to back up the health department in this measure. The greater part of it there is still dipped from cans on uncovered wagons in the streets. Bacteria counts and butter fat and total solids determinations are made twice each month in the entire district. A year ago the average bacteria count for the raw milk in La Salle and Peru was 626,238 and at the present time it is 232,916.

Grocery stores, meat markets and restaurants are being systematically inspected and scored and our program calls for the early discontinuance of all insanitary outdoor privies which are still found in nearly every block of our communities. About twenty-five or thirty of them were removed during the year, but progress in this campaign has been both slow and difficult.

Permanent records are being kept of all contagious diseases, births and deaths for the first time in the history of these communities. Records of deaths are obtained by requiring a burial permit to be taken out at the city clerk's office before a body can be moved for burial, and these permits are not issued until a proper death certificate is filed with the city clerk. Birth reports are voluntary, but each month we send blank report slips and an addressed envelope to

every physician and midwife in the district, with a request that they send reports of all births at which they officiated during the previous month. If no return is made by the middle of the month we call up the delinquent by telephone and in this way we have had no difficulty in getting fairly complete birth reports.

Note.—Discussion appears in section preceding.

PRESENT PRACTICE RELATING TO CITY WASTES COLLECTION AND DISPOSAL.*

PAUL HANSEN, ENGINEER STATE WATER SURVEY,
URBANA, ILL.

The problem of disposing of city wastes other than sewage is one which is increasingly pressing itself upon public attention. It may be regarded as the problem of municipal housecleaning. There is no municipal activity that is so much in the public view and which is so much criticised as the collection and final disposal of city wastes. Against this criticism, most city officials feel themselves almost helpless.

To properly understand the problem of city wastes disposal and collection it must be regarded as divided into three distinct branches, namely: (1) treatment of wastes by the householder; (2) collection of wastes; and (3) final disposal of wastes. These three branches are, however, so closely connected and inter-related that it is impossible to consider one of them without a consideration of the other two.

CHARACTER AND QUANTITY OF WASTES.

Before proceeding to a consideration of how city wastes disposal problems may be worked out it may be well to first state briefly the present available evidence on the character and quantity of wastes. For ordinary purposes wastes may be classified as garbage, ashes, rubbish, stable manure, and night soil. These terms are sufficiently well known to require no further amplification. The last two generally constitute special problems of a local nature and, therefore, will not be dealt with in this paper for lack of space.

Garbage in an American city amounts to about one-half pound per capita per day, equivalent

*Read before the Section on Public Health and Hygiene, Illinois State Medical Society, May 19, 1915.

to 500 pounds or one-fourth ton per 1,000 population. One cubic yard of garbage weighs approximately 1,000 pounds. It averages 75 per cent to 80 per cent water, 2 to 5 per cent grease, and 18 to 20 per cent of material that has a market value as fertilizer. The organic matter in garbage is combustible and when freed of water has a calorific value of about 10,000 B. T. U.

Ashes vary from one-half pound to four pounds per capita per day, depending upon the season of the year, naturally the larger figure prevails in the winter time. Ashes, under ordinary conditions, may contain anywhere from 20 to 25 per cent unburned coal, which becomes available when burning mixed refuse under high temperature conditions. Ashes weigh approximately 1,200 pounds per cubic yard.

Rubbish amounts to about one-fourth pound per capita and is approximately the same throughout the year. Rubbish is a very bulky material and will average about 150 pounds per cubic yard.

HANDLING OF WASTES BY THE HOUSEHOLDER.

The problem of securing the proper handling of the wastes by the householder is, perhaps, the most difficult of all, and yet it is of highest importance that this part of the problem be adequately solved for if it is not properly solved, it may multiply the cost of collection many fold. From the point of view of the officials who have the municipal wastes in charge, the ideal condition would be reached if each householder could be compelled: (1) to have receptacles of specific material, size and shape; (2) to place these receptacles on the curb stone or at the back alley (if there is one) at the time the collector is scheduled to arrive; and (3) to observe a strict separation of garbage, ashes and rubbish, if such separation is necessary to economical final disposal. It would also be desirable to require the householder to systematically wash and sterilize containers, and to carefully wrap the garbage in newspapers before it is deposited in the garbage can.

Anyone who has had much to do with the public, knows that all this is well nigh impossible, though it is very closely approached in a number of European cities where the public is more ready to acquiesce in rigid rules and regulations. On the other hand, it is impossible to tolerate promiscuous methods on the part of the

householder even in a liberty-loving country like ours. Many, if left to their own devices, would scatter garbage and refuse over back alleys and back yards, use filthy wooden boxes, kegs, and buckets for receptacles and interpose innumerable difficulties in the way of the collector for getting at and removing the several forms of wastes. Just what is a happy medium with reference to demands that may be imposed upon the householder is difficult to answer. Those who have had most to do with the matter feel that it is advisable to place the demands on the householder rather high, not only for the purpose of facilitating the collection of wastes, but also because of its educational value in promoting general cleanliness.

It is not believed to be imposing a hardship if the householder is required to have metallic tight-closing, non-leaking receptacles not exceeding sizes that one man may readily handle nor if the householder is required to maintain these receptacles readily accessible at the back alley in case there is one, or at the side or back door of the house in the absence of an alley. No collector should be required to enter cellars or travel an unnecessary distance from his wagon. Permission to maintain wastes in the cellars not only greatly increases the cost and difficulty of collection, but promotes slovenliness on the part of many people and greatly increases fire hazards.

Unquestionably it is a hardship on the poorer classes to provide themselves with metallic cans for garbage and ashes, and a serious question arises as to how their interests can be protected. In a number of cities where the rules require standard metal receptacles, the superintendents of collection waive such rules when they are convinced that poverty prevents compliance with them. In a few communities the municipality furnishes the containers or sells them for a nominal price, thus spreading the cost over the population as a whole. Such an arrangement has many arguments to recommend it. The principal objection thereto is the difficulty of inducing the householder to keep the containers in good condition when the householder is relieved of the financial burden of replacing it.

The life of the garbage containers may be greatly extended and incidentally they may be kept very much cleaner if the householder is required to drain the garbage and wrap it in

paper before depositing it in the receptacle. This would seem to be a very difficult thing to accomplish, notwithstanding the fact that it has many advantages for the householder. Yet it has been successfully accomplished in Minneapolis.

Proper attitude on the part of the householder cannot be accomplished without a vigorous campaign of popular education. This must be carried out tactfully and much stress must be laid on the fact that co-operation with the city officials not only permits better service and greater cleanliness, but also means a saving in money to the tax-payer.

COLLECTION.

The problem of wastes collection is a very complex one though there are certain well-established fundamental principles that may serve as a reliable guide in working out a proper system for any given town. It may be clearly seen that the success of the collection system is very intimately dependent upon the householder performing his share as already outlined. It is not to be expected, however, that the householder will co-operate unless the men on the collecting wagons are courteous and intelligent and it may be set down that one of the prime conditions to successful collection service is the employment of men who will meet these qualifications. Quite the opposite view has prevailed hitherto and it has generally been accepted that the garbage men must necessarily be among the cheapest and commonest of laborers. The wastes collection force will command much more respect from the householders and incidentally their self respect will be materially increased by providing them with neat uniforms and facilities for shower bath and change of clothes when the day's work is done.

The methods of collection are also greatly influenced by the method of final disposal. In some cities, for example, especially the larger ones, the combined cost of collection and disposal may be reduced to a minimum by treating garbage and refuse for the recovery of saleable material. This necessitates a strictly separate collection of the garbage, ashes and rubbish. The garbage can then be put through the so-called reduction process by which grease and fertilizer are recovered. The refuse may be sorted for the recovery of marketable materials and the ashes may be dumped for filling in hollow places.

In some smaller communities, separation of the refuse may be desirable so that the garbage may be fed to hogs and in this manner be converted into a marketable product. There is nothing insanitary in garbage disposal by feeding to hogs, provided it is correctly carried out.

In some cities (generally those of medium size) it proves most economical to incinerate ashes and refuse all mixed together. Under such circumstances the system of collection as well as the demands placed upon the householder may be greatly simplified. The collection department need have but one type of wagon, and the wagons may be filled with a relatively small number of stops. The householder is benefited, in that only one receptacle need be maintained and there results an additional advantage in that the mixture keeps down in large measure the bad odor of decomposing garbage.

With reference to the frequency of collection, it may be said that where the separate collection of wastes obtains, garbage should be collected twice a week in the winter time and once every day or every other day in the summer time. Ashes may be collected weekly or at longer intervals, local conditions controlling. It is common practice in many American cities to collect rubbish only once or twice per year, but better practice is believed to be once every two weeks or once per month. Combined wastes may be collected once per week or oftener as best suits the convenience of the householder and the collection department.

There is very much to be said on the subject of type of collection wagons to be used. Generally speaking, a collection wagon should be large enough to hold all that the collector can collect in one day, leaving merely sufficient time at the beginning and the end of the day to come from and return to the place of final disposal. There may be local conditions, such as steep grades and bad pavements, which will demand a smaller wagon than prescribed by the above rule. In such case, the wagons should be of a size that may be completely filled on each trip. Another advantage of the large wagons is that higher grade men can be employed as drivers and helpers for it will be permissible to pay much higher wages without increasing the relative cost of labor to wagon capacity. The wagons should be of a height to render it easily

possible for one man to empty into them an ordinary household waste container. Generally speaking, underslung wagons are best adapted to the purpose and the top should not be more than 5 feet from the ground. If such a low height is not practicable, due to the size of the wagon or other cause, a running board may be used.

Another essential requirement of the collecting wagons is that they be substantially made and so arranged that they may be thoroughly cleaned with a hose nozzle. On the whole, sheet steel bodies are preferable to wooden bodies, and rear dump is preferable to bottom dump because the latter is less cleanly and precludes the possibility of having the body low enough to facilitate loading.

Suitable coverings for wagons have received a great deal of discussion. It is not possible to say now that the final solution has been reached. A few years ago metal lids were favored, but these proved so noisy and became bent and out of order so readily that they have been practically discarded. Heavy oiled canvas has taken their place in large measure, though even this has many objections. In Minneapolis, where the householder wraps the garbage in newspaper, the heavy canvas has proved highly satisfactory. In European practice the tendency is toward elaborate coverings so arranged as to be open only when a household can is being dumped into it. They operate on various principles, some of which are very ingenious. Some forms of wagon coverings require a special householder's can so arranged that the can cover and the wagon cover are removed simultaneously after the can has been inverted and then only a sufficient opening is made in the wagon to admit the top of the can. This is a great advantage in European practice where mixed refuse is generally collected and loading of wagons is likely to be a very dusty operation, especially on windy days.

Perhaps it is not premature to speak of the relative merits of power-driven and horse-drawn wagons. Horses are still by far the more generally used, but it is quite probable that the larger wagons, especially such as are used in very large cities, will be more and more equipped with motors in the future.

The cost of collection varies widely, depending on local conditions. The minimum cost per ton

is obtained where houses are built closely together, where standard receptacles are used and the receptacles are placed on the curb or in the alley prior to the arrival of the collectors. Such an arrangement permits of very rapid loading, hence a maximum collection for the time and labor involved. In suburban communities where the house lots are very large and there are no back alleys and it is necessary for the collector to walk long distances to get and return receptacles, then the cost of collection per ton reaches a maximum. Generally speaking, the cost of collection may be placed at \$1.75 to \$2.75 per ton or from 15 cents to 25 cents per capita per annum.

FINAL DISPOSAL.

Incineration. Final disposal in European countries, where much attention has been given to this matter, has become more or less standardized in favor of incineration of mixed refuse at high temperatures with forced draught. Partial recovery on the cost of disposal is made by utilization of the heat produced for lighting, pumping water and sewage and heating public baths. The clinkers are sold and used as an aggregate for concrete or as a base for sidewalk paving. In this country a great number of methods of heat destruction have been developed and more or less successfully used, but there is at the present time an increasing tendency to adopt incineration as practiced abroad. It is not to be expected, however, that incineration will entirely replace other methods now in vogue. Incineration at high temperatures is practicable for communities with populations of 50,000 and upward.

The cost of operating these incinerators where there is no return due to utilization of steam or clinkers is approximately 60 to 70 cents per ton. With full utilization of steam and clinker, the cost may be reduced to 20 or 25 cents per ton. Some enthusiasts have made the claim that with full utilization of the products, especially if the refuse is sorted for saleable materials, this process can actually be carried out at a profit.

Incineration has much to recommend it on sanitary grounds. As already indicated, it permits of the combined collection of refuse which eliminates from the streets and alleys in large measure the odor of decomposing garbage and prevents breeding of flies. It also simplifies matters for the householder and the collection

department. The plant promptly consumes all of the material, reducing it to an innocuous vitreous clinker and if the plant is properly maintained, there is produced very little odor and very little smoke. The claim is made that these plants can be operated without odor and without smoke. But this claim has not uniformly been substantiated.

Incinerators have an advantage in large cities in minimizing the length of haul inasmuch as plants of relatively small size may be located at different points throughout the city. This is not practicable with some other methods to be touched upon later.

Cremation. In the United States for a number of years, the rather make-shift method of burning garbage commonly called "cremation" has been in use. Various furnaces for cremation have been exploited and the process is generally applicable to garbage and dead animals alone, though the addition of rubbish would naturally not interfere with the process. All of these furnaces require additional fuel, variously estimated from 200 pounds to 700 pounds of coal per ton of garbage. They are effective and may be economical, especially where fuel is cheap. They are particularly applicable to small installations, more particularly of a temporary character, as for military and construction camps. Unfortunately many of these furnaces have been poorly designed and poorly constructed so that they have not given satisfaction and have usually produced very disagreeable odors. Very extravagant claims are made by manufacturers for furnaces of this general type, but, as a matter of fact, there is very little actual test data on hand to substantiate these claims. On the contrary, the few tests that have been made, more particularly by the Ohio State Board of Health under the direction of the writer, have shown high fuel consumption and but imperfect results as regards completeness of combustion and prevention of odors.

Reduction. The most typical method of final disposal in the United States is the so-called reduction process. This is applicable to garbage only and its adoption necessitates the strict separation of garbage from other wastes. The object of this process, as already indicated, is the recovery of fertilizer and grease. There are a variety of processes, all of which produce a rather

pronounced odor disagreeable to most people and for this reason it is generally regarded as necessary to locate these plants remote from habitations, thus creating a long haul. To render the process profitable, it is necessary to handle large quantities of garbage, therefore, the process is only applicable to large cities. The practicable minimum population for a city using the reduction process is about 100,000.

A typical method of reduction consists in cooking the garbage for 6 or 8 hours with steam in so-called digestors. From the digestors, the garbage is conveyed to presses of one type or another which press the free water containing grease out of the garbage, leaving a so-called tankage with about 50 per cent moisture. The tankage is then dried in rotary kiln driers either heated directly by furnaces or by steam coils. From the driers, the tankage is taken to so-called grease extractors in which it is flooded with naphtha which dissolves the grease. The grease is subsequently recovered from the naphtha and the naphtha is used over and over again with a loss of about 5 gallons per ton of garbage. The tankage with grease extracted is enriched with a residue from the evaporation of press liquors and is again dried. It is then screened and the coarser particles that remain on the screen are ground and added to the fine screenings. This constitutes the marketable substance known as fertilizer tankage. It has a manurial value which commands a price of anywhere from \$6.00 to \$10.00 a ton.

The water, which is pressed out of cooked garbage from the digestors, also contains grease. It is caused to flow into a series of tanks in which the grease rises to the top and is skimmed off. This grease is mixed with the grease recovered from the naphtha extraction process and is sold at from 3 to 5 cents a pound, depending upon market conditions. It is of a low grade but applicable to many processes in which a low grade grease is permissible, such as in making low grade soaps.

The water practically freed from the grease is carried into evaporators, usually of the triple effect type, is reduced to the consistency of a thick molasses in which form it is mixed as already described, with a portion of the tankage before its final drying, thus enriching it in manurial value.

The foregoing description is that of a rather elaborate process, but it is one which, if carried out in a proper building suitably ventilated, will not create a great deal of odor, nor does it produce any liquid wastes that will defile neighboring water courses. Other processes usually represent some simplification of the one described. They do not have such a high recovery of saleable products, but are sometimes more economical, due to reduction in operating costs.

Experience in Columbus and Cleveland, Ohio, where garbage reduction plants are municipally owned, shows that this process can be carried out at a net profit of \$0.50 to \$1.90 per ton.

It is to be remembered, however, that this method of disposal does not take care of the ashes and refuse. If, however, the local conditions are such that dumping grounds for ashes and refuse can readily be found a plan involving the reduction of garbage may prove decidedly the cheapest method for solving the wastes collection and disposal problem as a whole, notwithstanding the increased complexity in the collection system.

Feeding to Swine. Feeding of garbage to swine is a method not to be despised. It also has possibilities of large profits, but on the other hand it represents a complex business enterprise which involves many risks. For its successful and sanitary operation, a rather elaborate plant is required, including suitable houses for hog pens, ample means for keeping the pens clean, and apparatus for sterilizing the garbage as soon as it arrives on the ground so that it will not undergo putrefaction until it is consumed, and so as to protect the hogs against any disease organisms that the garbage might contain. A hog farm using garbage for feeding may at least be expected to maintain itself and under favorable conditions may yield a substantial profit. Many people object to feeding garbage to hogs partly for esthetic reasons and partly for the reason that in actual practice it is difficult to secure strict adherence to sanitary requirements.

Burying. Another method of garbage disposal is burying. This is particularly applicable to small size cities, too small perhaps to utilize incineration and reduction yet so large that some centralized method of garbage disposal must be adopted. Burying of garbage can be most successfully accomplished in trenches about 18

inches deep, 4 feet wide and of indefinite length. A first trench is opened and into it the garbage is dumped, beginning at one end. As the trench is filled, a second trench parallel and near to the first trench is dug. The earth from the second trench is thrown over the garbage in the first trench and this process is continued indefinitely. Under proper management, burial of garbage gives very little offense and in due time the garbage is thoroughly humified. In an ordinary loose soil, complete decomposition takes place in less than a year, the only remaining traces of the garbage that can be found is a thin, black stratum resembling loamy earth with an occasional piece of crockery or rusty tin can to attest the original composition thereof. This permits the land to be used over again once every two or three years. An area of approximately one acre per 1,000 population will serve indefinitely. The land is not in the least injured; on the contrary, it is materially improved, though the tilling thereof is rendered somewhat more difficult due to the presence of occasional pieces of glass, crockery, and metal ware.

Dumping. Dumping is not applicable to garbage. It may be said positively that this cannot be carried out successfully without nuisance, even when garbage is mixed with other refuse. Ashes and rubbish, however, are reasonably suitable for dumping provided dumps are maintained in good condition. A little care on the part of the dump foreman will make it practicable to keep clean ashes or probably clean earth from cellar excavations on the surface and the dump need never be unsightly and need never create a nuisance due to the blowing about of fine ashes and paper. Frequent sprinkling of the dump is also of value. Land deeply filled in with ashes and refuse is not ordinarily suitable for building purposes, but it does afford a means for converting unsightly hollows into attractive parks and playgrounds. Many cities have availed themselves of this very satisfactory method of reclaiming waste land.

Recovery of Saleable Material From Rubbish. It is quite practicable to operate in conjunction with a dump or incinerator plant, a plant for recovering saleable products from rubbish provided the rubbish is collected separately. The principal saleable products are paper, rags, glass, leather, rubber, bottles, iron, clean tin cans, and

perhaps other substances. The recovery of the saleable products is quite large amounting to about one-third of the total collection. Profit derivable from the sorting process is variable, but may under favorable conditions reach \$1.00 per ton of rubbish. It has sometimes been found profitable to carry on in conjunction with the recovery process a plant utilizing tin cans for window weights and roofing washers or any other purpose to which the material may be applicable. A refuse incinerator may often be operated economically and advantageously in connection with a sorting station. The heat developed may be made to generate steam for operating belt conveyor from which the saleable material may be picked off and sorted. Such conveyors are so arranged as to automatically dump the remaining material on top of the furnace where it may be readily pushed into charging doors. This combination, however, is more applicable to large than to small installations.

CONCLUSIONS.

The point to be emphasized in connection with the city wastes collection and disposal problems is the highly complex and technical nature thereof. It is eminently an engineering problem and trained engineers should be called upon in attempting its solution. This is becoming more and more the prevailing practice and it is rarely that large cities undertake the establishment of wastes collection and disposal systems without expert advice. It is also to be hoped that municipalities will realize the necessity of keeping this fundamental house cleaning problem out of politics. The proper handling of a wastes collection and disposal department for a municipality requires great skill and only men of special qualifications either by training or experience, or both, should be sought as the heads of city cleaning departments.

Note.—Discussion appears in section proceedings.

SOME REFLECTIONS.*

E. W. WEIS, M. D.,
OTTAWA, ILL.

When our secretary asked me to relate some reflections I was of the opinion that it would

be an easy thing to give many. Well, perhaps it would, but I will confine myself to a reflection that has gradually forced itself upon me and that, too, by a process of experience. I find that times are changing, brought by a necessarily changing environment. The atmosphere of a medical society is not at all the same as it was several years ago.

To conduct a successful society meeting some twenty years ago it was only necessary to send out the numbers of invitations of papers wanted and the return mail would bring acceptances. There was no trouble and little effort in making up a program. In fact, many members would chide you because you failed to give them the opportunity to read a paper, present some interesting case or detail some experience out of the ordinary. These men were actuated by the impulse of wishing to make things easier for their brother practitioner. It was a comparatively easy thing to write a paper in the old days. Textbooks were comparatively few and those on similar subjects all agreed. So, barring hypothetical and theoretical problems, a little digging into written references, plus experience in application, plus the desire to be helpful was all that was necessary. And how the old fellows enjoyed the discussions. They were discussions right. Never was a doubtful statement allowed to pass undiscussed and if need be contradicted. Many of you may remember how hours were taken up in the discussion of such subjects as diphtheria, the use of ergot, blue mass versus calomel, and when through there was confusion worse confounded. But they were interesting and led up to what we now have—exactness.

For many years I was secretary of our county society and viewed from the standpoint of my experience in the same capacity the last three or four years, I was very successful. Our meetings were very well attended, fully ninety per cent of the membership came and enjoyed the day and their patients were better off by reason of their having mingled and listened to the papers and discussions of their fellow members. So that, when I became State secretary, the changes that were inevitable, came so gradually as to be scarcely noticeable and when, as I saw frequently happen, I was asked to advise how to make county meetings interesting, at least of enough interest and importance so that the larger per

*Delivered at the Secretaries' Conference, May 18, 1915.

cent of the membership would be in attendance, I relied upon my former experience and told them that the fault did not lie with the doctors, but with the executive officer. That the secretary failed to ask the members to present papers and especially on subjects that the every-day practitioner desired information on. I can recall the frantic requests of many, many secretaries who wanted to know what they should do and how to proceed so that members of the profession would take an interest in society work. My almost invariable reply was that "it was up to you, doctor, that if you were energetic for the welfare of your society you would have very little difficulty." Please remember that this was the stand I took up to, say, five years ago. Since then, however, my notion on this matter has become radically changed, for I, in common with the other local secretaries, have found the obstacle to be almost unsurmountable and with them have had to change methods and conform to the conditions now existing, which are so different to what they used to be. Nowadays there is no doctor in active practice who cares a hang about discussing old-time honored time wasters. They would not listen five minutes to the proposition of something that has been relegated to the past or what has been accepted as a dictum. What they want is something new, something authoritative, something that can be of use, coupled, perhaps, to a little refreshment for the inner man. Nowadays a society meeting becomes a part of a post-graduate course and as such must have the stamp of verity and of authority.

Therefore, it becomes necessary, if the executive officer wishes to present something for the consideration of his society, he must go to him or her who is specializing and request their presence.

To prove my contention, I will simply give the experience of our county society with a membership of nearly 100. We have two general meetings, annual and semi-annual. Three years ago we adopted three evening meetings to be held in some town on the Interurban System. These meetings were to be short and the essayists to be all of the town in which the meetings were held. In other words, local talent. Transportation was easy. At the general meetings of the society I found it necessary to import foreign talent. These came and their names on

the program insured an attendance of at least sixty-five to seventy-five per cent of the total membership. The evening meetings of local talent only, at the very most developed only thirty per cent and as low as fifteen per cent. Now, the subjects at these evening meetings were interesting and were supposed to be helpful to the busy practitioner, short, snappy and live papers, but the results were just exactly as I told you. So, the reflection comes to me that the situation should be gone into carefully by every local secretary and no expense should be spared in securing men for the program that will bring out the largest possible attendance. The custom of our society then in later years is to pay the necessary traveling expenses of each essayist that comes to us. While these men give up considerable, even one day, it means a monetary loss to them. Of course, the old notion is they will get it back some day; perhaps they do. I know of many that never get it back, except the grateful appreciation of those that listened; so they should not be at a loss financially in being asked to come a great distance for our benefit.

If I have made my point clear I think that you will all agree with me that what is needed is a better offering of knowledge and a desire on the part of the society to pay in part at least for that offer. The methods of twenty, fifteen, ten and even five years ago are not the times of today. We must accept things as we find them today and not as they used to be.

There is another phase of this proposition that might as well be spoken of at this time, and, if possible, to ascertain by discussion the reasons therefor. As I stated in the beginning of this paper, in the olden days it was no difficult matter to secure plenty of local talent for a good live program. Physicians were anxious to be on it, but experience now shows that that is not the case today. I do not believe it is due to a general apathy or lack of desire to impart knowledge, but I am of the opinion that the underlying cause is, that the ordinary practitioner feels that he is either incompetent, or that he hasn't sufficient experience upon which to base personal knowledge in the presentation of any given subject. He feels that what he might have to say may be open to too much adverse criticism and not a general discussion. It certainly is not

pleasant to spend considerable time and thought on the presentation of a subject and to have a number of brother practitioners try to tear it to pieces, criticising the manner and method of presentation. There is a big difference between criticism and discussion. We are supposed to discuss, to join together in the consideration of any given topic, to supply added knowledge to that of the essayist. In this way it becomes a matter of general interest. Whether this criticism is responsible for the lack of desire or not, I wish you may determine, but there is something—for my experience in the last requests that I sent out to our members has certainly proved to me that there is something wrong somewhere. I sent out ninety-seven requests asking specifically for a favorable reply to the request for a paper. There was not a single favorable answer and only two who apologized and gave good reasons for not being able to. Of course, then I was driven to make personal requests of local members and to import foreign material. You would naturally suppose that owing to the lack of enthusiasm shown that the members took no interest in the meeting and that there would scarcely be a quorum present, but astonishing to say fully seventy per cent of the members were there, and after the meeting expressed themselves as being highly edified and entertained by what they heard and were very grateful for the class of subjects presented.

So then the reflection will come to all of us, that to sustain the interest of the medical profession in recognized work, other means must be adopted than those that have been used in the past. Local conditions must be carefully studied. There are no two county societies that will present exactly the same problems. The interest of unified work must be protected. By this I mean that the well being and interest of one physician should be that of all. Nowadays we have too much at stake to allow the individual physician to suppose that he either knows it all or can do it all. Take, for instance, the question that one of our members is sued for malpractice, then there is raised the cry for professional support. We have got to stand together and it is due to the honor of our profession that we are a unit in assisting in a defense. In the future these cases of malpractice will increase, for under the changing laws our legal friends find they

must change their methods and will attack the doctor where heretofore the corporation has been fruitful ground. The slightest excuse is now only necessary for either the filing of a suit or the demand by compromise for damage. The thought has often occurred to me that it might be a good idea at almost every meeting of a society to discuss for a short time at least, the question of liability on the part of the physician. Our legal counsel is doing that very thing in a general way, by publishing a short article in the JOURNAL each month. He can, however, only tell the general supposition, but by the presentation and discussion of specific cases, much can be done to anticipate, and probably prevent, great notoriety in some given case.

As the medico-legal committeeman of our society, I have occasionally brought up this question by citing actual cases where suits were prevented without any publicity and have outlined the manner in which physicians should handle certain cases so as to fully protect themselves should any question arise later. No physician is immune should a bad result happen in the handling of a case. This need not necessarily mean the surgeon, but the ordinary practitioner in the treatment of, say, diphtheria, tetanus or puerperal infection. Why not know exactly where you stand? This knowledge can only be gained by concerted action on the part of all of us through discussion. Our patients are not as blind as they used to be, they are now asking pertinent questions and it behooves us to know how to make the proper answer.

In working for the benefit of ourselves, we necessarily work for the betterment of mankind generally.

Reflect on this.

OPERATIVE TREATMENT OF PELVIC HERNIA.*

HENRY T. BYFORD, M. D.,
CHICAGO.

My reason for presenting a paper upon this time-worn subject of pelvic hernia or prolapse is the tendency of operators to fix their attention too much upon the amount of displacement of the uterus and too little upon its relation to

*Read before the sixty-fifth annual meeting of the Illinois State Medical Society, Springfield, May 20, 1915.

the conditions of the surrounding pelvic tissues and structures. As the position of the uterus is a result of those conditions rather than the cause I have made use of the term pelvic hernia. Colpocele, cystocele, rectocele and enterocele, one or all in different degrees, both with regard to each other and to their individual development and duration, constitute just as important a part or parts of the hernia for the consideration of the surgeon as the uterine prolapse or hysterocoele. And as the individual cases differ in these respects, no one operation or series of operations can be recommended for the treatment of what is usually called prolapse and procidentia of the uterus.

It will simplify our discussion to discard the somewhat prevalent belief that lacerations are the causes of the displacements. Extreme cases have been observed in young virgins. I have seen more cases in childbearing women with small lacerations than with large ones. I have seldom observed much displacement in cases of complete laceration of the perineum. This is due partly to the firm cicatrization and partly to the fact that a complete laceration usually takes place before there is much over-stretching and injury of the supporting tissues except in the line of laceration. Pelvic hernias are more apt to occur in women who have borne several children in quick succession, and also in those who have had a tedious second stage of labor in which a large or mal-presenting head has drawn down the distended vagina and lingered too long on an over-distended perineum. In these cases the anus is pushed backward and the traumatized levator and muscles are so well stretched as to be out of the way and the laceration, if it occurs, involves mainly the superficial perineal tissues. The over-distended vaginal walls are dragged down and partly severed from the surrounding connective tissue attachments, and the pelvic floor and perineum are distended and bruised by the head until muscular fibres, blood vessels and fasciae are extensively destroyed, while a visible or palpable laceration may be wanting. In such a case the normal contraction of a nonlacerated or slightly lacerated perineum does not take place right after the child is delivered, but the pelvic floor and perineum either retain their extended flattened form for a while and feel somewhat like wrinkled leather, or the collapsed vaginal outlet

admits the whole or half hand without giving the normal elastic resistance. Vaginal involution is then slow and imperfect and the contused and ecchymotic muscles and connective tissue never regain their integrity. Subsequent labors are apt to be easy and quick ones and the patient may consider herself quite healthy or strong until the menopause approaches or has passed, when the displacements begin to show themselves as a result of the old injury plus the senile changes. Thus the extreme displacement may not be observed for many years after the occurrence of the injury that leads to it. Hence we should not expect to accomplish a cure by the mere repair of visible lacerations or by bringing visible muscles and fasciae together at the site of a laceration.

The history of the treatment of prolapse is largely a history of failure because operations were originally conceived on the basis of repairing the visible lacerations or of constructing a barrier at the vaginal entrance without restoring the normal action and position of the deeper pelvic structures. Perineorrhaphies, posterior and anterior colporrhaphies, no matter how extensive, with amputation of the cervix and even with removal of the uterus, were unsuccessful in a large proportion of cases. One of my first cases of procidentia was in a nullipara about sixteen years old. I removed an immense amount of relaxed vaginal wall and made the vulval and vaginal entrance smaller and narrower than normal, yet in a few months the uterus was again outside of the body and covered with as large a vaginal mucosa as before. The case demonstrated to what extent the vagina and perineal tissues will stretch when they have to withstand the entire abdominal pressure.

Ventral suspension is another irrational remedy that should be relegated to history rather than be employed in practice, because the whole abdominal pressure upon the relaxed pelvic tissues is supported by, and constitutes a drag upon, the new abdominal attachment. And this is true even when the perineum and vaginal entrance are also repaired, for the uterus is suspended far above them and usually stretches and attenuates its peritoneal attachments and finally rests on the pelvic floor, leaving the perineal and vaginal operations to resist the entire abdominal pressure. I suppose that some of the newer

operations which embed the uterus in the abdominal walls, and which should also be relegated to history, may be made to hold the uterus somewhere on the abdomen, but they are mutilating operations and should not be performed when more rational and scientific methods can be utilized. By way of criticism rather than acknowledgment of merit, I would like to add that if a makeshift ventral suspension be decided upon it will be advisable also to draw forward the round and broad ligaments and attach them to the anterior abdominal wall and thus take up the slack that exists in the underlying connective tissue. This requires but little time and adds but little to the gravity of the operation in cases in which extensive and prolonged traumatism is inadvisable.

In selecting the operative procedure for a given case of pelvic hernia, we should not be prejudiced in favor of any one operation because it may have been found to be efficacious in some or even in the great majority of cases as they present themselves. If we do so we will be liable to court failure by employing it in cases to which it is not adapted. Therefore, at the outset we should ascertain which of the individual structures are giving way and to what extent. We should also ascertain, if possible, which structures gave way first and which are still capable of functioning, or whether all of the supporting structures are giving way simultaneously or promiscuously. In other words, what was the beginning, what is the stage, what is the course, what the extent and what will be the end? Such an orientation will help us to determine how much operating, as well as what particular kind, must be done.

With regard to the beginning we must carefully consult the history of the case, including everything bearing upon the cause, whether general or local, in childhood or childbearing, occupation, habits, records of previous examinations, operations, etc. The patient's observations and experiences will help us to determine the course and the stage; the time she first noticed symptoms of displacement or felt the vaginal walls or cervix at the vulva, the length of time since she was injured by one or more difficult labors, her age with reference to the menopause, whether the first signs appeared soon after possible or

probable causes, or were delayed until the menopause or after, etc.

With regard to the extent and the probable ending, the examination is, of course, the most important. Not only the position of the uterus, rectum and bladder while the patient is standing, but while lying on her back on the examining table during relaxation, and their changes in position while she is bearing down; also the kind and place of the resistance afforded when the parts are pulled downward by vulsella and pushed upward as far as possible, and the part played by adhesions, cicatrices, senile atrophy, obesity, abdominal visceroptosis, etc., should receive attention. In incomplete cases we should note the relative position of the cervix and fundus uteri, the bladder, urethra, rectum and anus, the depth of the vaginal fornices, the size and shape of the torn or stretched perineum, the amount of laceration and cicatrization, the pathology and functional deviations of the bladder and rectum, etc. These are only a few of the things to look for and interpret and correlate, but they suffice to illustrate the fact that the finding of the pelvic viscera down against or protruding at or through the vaginal entrance gives us but little definite information as to what is really wrong and just what should be done.

Rather than classify the varieties of so complicated and varied a mechanism I will mention a few concrete cases that will serve as examples.

Take the case of a woman before or soon after the menopause in which the cervix comes down to the vaginal entrance when she strains at stool, or after a day's work in the laundry. Placing her in dorsal position we find the uterus and pelvic organs in a normal position except that the cervix is not quite as near the sacrum as it should be, and there is a little sagging of the tissues about the vaginal entrance. Asking her to bear down vigorously, while we hold the finger in the vagina we feel the uterus descend to the vulva with its long axis following the curve of the pelvic axis, with a slight yielding of the perineal body and neck of the bladder. When the patient ceases to bear down the uterus gradually recedes and returns to an approximately normal position. Here the pelvic connective tissue which suspends the uterus has not given way but is going to under the conditions that have existed. There is no cystocele or rectocele,

but the vaginal outlet is relaxed. The perineal body has lost its normal shape and resistance, either from visible or palpable lacerations or from submucous and subcutaneous destruction of tissue, and instead of supporting a normal vaginal entrance allows an anterior or posterior vaginal fold, or both, to show between the separated labia. The lower supports have been impaired and upper ones are yielding to the force of abdominal pressure. If we can get such cases before the uterine descent has existed or been apparent for many months we may hope for a cure by a perineorrhaphy and a posterior and, if necessary, an anterior colporrhaphy which take off a portion of the sagging vaginal walls and draw together the fasciae and muscular fibres from either side of the rectum and bladder. I might say that to hunt for and dissect out and suture torn ends of muscular fibres is not usually practicable. There is ordinarily no large visible tear and there may be but little visible muscle left. This is one of the simplest kinds of cases, but as senile atrophy progresses the descent of the uterus becomes progressively greater until the cervix protrudes from the vulva and a procidentia results whose mechanism can no longer be determined with accuracy. It may then be necessary to remove the uterus and suture the stumps of the broad and sacro-uterine ligaments to the vaginal walls, as will be described later.

In other cases there may be an anterior colpocele or small cystocele, or a posterior colpocele or rectocele in which the uterus does not go back to a normal position when the patient lies down, yet if replaced will stay in place until the patient bears down or stands up. If the uterus has only begun to descend or if the descent is only slight, the same kind of operation may be expected to suffice, but it must be more extensive. The cystocele calls for the removal of a strip of anterior vaginal wall extending from the neck of the bladder to the cervix, widening at the cervix so that the relaxed fascia can be drawn together from the sides and united in front of the cervix. If the cystocele is a large one of long standing and the uterus has descended to the vulva and the patient has passed the child-bearing period, the bladder may be separated from the uterus and anterior vaginal wall and a vaginal fixation of the uterus be done. A posterior operation will be required which will

vary from a simple perineorrhaphy to an excision of a portion or nearly all of the posterior vaginal wall according to the condition present, whether it be an ordinary laceration, a posterior colpocele or a rectocele.

Perhaps the largest number of cases of uterine descent are connected with retroversion of the uterus and laceration or relaxation of the vaginal outlet and perineum. If these cases are encountered before much descent has taken place an operation to antevert the uterus will be required in addition to the perineorrhaphy and colporrhaphy. If the patient has had the menopause a vaginal fixation is ordinarily the best way. If, however, there is a liability to pregnancy an Alexander operation is preferable accompanied with, if the abdomen be opened, application of the sacro-uterine folds. If the patient is near the menopause a ball pessary may in some cases be advantageously worn until the menopause and then a vaginal fixation be performed, or a sterilization of the patient may precede the vaginal fixation.

The presence of a large cystocele in such cases may call for a complete interposition of the uterus between the bladder and the anterior vaginal wall. This operation is efficacious even when there is considerable descent of the uterus with appearance of the cervix at the vulva. A separation of the bases of the broad ligaments from the cervix and their attachment or crossing in front may be made to assist in retaining the uterus. An interposition of the uterus without attention to the surrounding lesions cannot always be depended upon.

When the cervix is long it should usually be amputated. There is a class of cases in which the fundus uteri or the cornua or the adnexa are held in the cul-de-sac of Douglas or against the sacro-uterine ligaments by old adhesions, while the descent of the vagina and other pelvic tissues stretch the cervix supravaginally until the os reaches the vaginal entrance, or even protrudes. In such cases it is usually best to leave the already fixed fundus alone and perform high amputation of the cervix, for the fundus is already supported by its old attachments. Operations for the relief of the lesions and displacements of the vaginal outlet will, if thoroughly done, complete the cure.

When there is complete procidentia, practically

all of the pelvic supporting structures are torn or overstretched beyond physiological repair. If the vagina, bladder and lower rectum are not completely turned out and the uterus not too large, a Watkins interposition operation with a perineorrhaphy extending well back along the posterior vaginal wall may be curative. If the case, however, is of long duration, the uterus enlarged, the vagina completely everted and all of the structures about the uterus excessively elongated and attenuated, it is impossible to operate upon the structures in such a way as to get any support for the uterus. Then the only way to get a proper hold upon the deeper supports about the cervix is to remove the uterus and suture the stumps of the broad ligaments so as to fold or overlap them and attach them to the bladder and vaginal walls. The reason for getting rid of the uterus is that it takes up so much room that we cannot get at the relaxed and elongated supporting structures in such a way as to advantageously shorten them and give them attachments that will enable them to again exert their supporting function. In extreme cases the whole or a portion of the vagina must be removed in order to draw together the relaxed connective tissue fibres.

There are many other kinds of cases, such as procidentia in the child or adult virgin, anterior vaginal enterocele in which the bladder is separated from the uterus and the intestine comes out covered only by the anterior vaginal wall, posterior enterocele in which the cul-de-sac of Douglas comes down to or through the vulva without bringing the rectum out with it, procidentia in which ascites or a uterine tumor acts in connection with relaxed or injured pelvic tissues, etc., all of which can be cured only by a recognition of the predisposing and determining factors in each case and applying the remedy intelligently.

DISCUSSION.

Dr. Robert T. Gillmore, Chicago: In the individual diagnosis of prolapse and laceration in the pelvic muscle and fascia it is primarily most important to determine accurately the structures that are involved if we expect to get a correct repair as well as a symptomatic cure of the patient.

Etiology. While we have anomalous cases of uterine prolapse in virgins, as stated by the essayist, the majority of cases are caused by the traumatism of labor and, unfortunately, is often due to improper obstetrical management.

Prophylaxis. The prophylaxis in these cases is of prime importance. Where we have a complete pro-

lapse it could, in many instances, have been prevented. Asepsis during labor is a chief factor in preventing subinvolution, which means an increase in the weight and size of the uterus. The administration of pituitrin in uterine inertia may, in favorable cases, diminish the number of instrumental deliveries. If the forceps are used, traumatism may be avoided or lessened by applying the instruments before the soft parts are edematous or friable. Another important thing in the management of obstetrical cases is the postural treatment after labor. In other words, on the third or fourth day instruct the patient to lie on the abdomen and on the fourteenth or fifteenth day begin with the knee and chest position and continue this practice for two or three weeks. It is important to examine all confinement cases six to eight weeks after delivery in order to ascertain if there are any submucous tears, which condition it is not always possible to recognize immediately after labor on account of the distortion of the parts. Also, if you have done an immediate repair it is necessary to find out if primary union has taken place.

Treatment. When it comes to the treatment, each patient requires an individual technique. Occasionally it will be necessary to go into the peritoneum, between the bladder and the uterus. It must be a matter of judgment as to the amount of tissue you remove in order to get the normal caliber of the vagina. In regard to the repair of a cystocele in these cases it is essential to have the uterus present in order that we may draw the anterior vaginal wall upward and backward and place the bladder in its new position on top of the uterus; consequently, I am not in favor of hysterectomy. I believe that this latter operation and the Alexander operation have served their purpose, however, in developing the more complicated operations, such, for example, as the transposition operation. Hysterectomy, if done at all, should be resorted to only when it is distinctly indicated in such cases as malignancy or fibroid tumor, when, of course, the entire uterus must be removed; but whenever possible I believe it should be saved. The question of increased size of the uterus *per se* is not of much importance unless it is due to an actual hypertrophy of the walls of that organ. Under ordinary circumstances I believe that increased size of the uterus is due to passive congestion and after the organ had been restored to its normal position and the obstruction to the venous circulation is overcome it will return to its normal size. The uterus is positively essential in transposition operation if we would prevent a recurrence of the prolapse.

There is one other thing. The pelvic fascia is as important a structure in vaginal operations as the rectus fascia is in abdominal surgery. When a post-operative abdominal hernia occurs it is due to the fact that the fascia of the rectus muscle has not united or the catgut suture has been absorbed too quickly. I believe that in pelvic operations we must get the pelvic fascia together in order to support the abdominal viscera above.

COMPARATIVE X-RAY WORK.*

E. M. SALA, M. D.,
ROCK ISLAND, ILL.

I have chosen this subject for two reasons.

First. Because you have the normal and the abnormal always before you for comparison.

Second. Because comparative evidence is not permissible testimony in court cases.

As regards the first reason there can be no question about the importance of having both the normal and the abnormal before you for comparison. The degree of abnormality may be very slight and, therefore, almost unrecognizable, and yet if you compare the same with the normal you can readily see the deviation. In the first, I have also included views from different directions on the same plate; this avoids having two or more plates lying around becoming separated and at the same time has the whole case before you in a "nut shell."

Regarding the second reason, comparative evidence not being permissible testimony in court cases, I wish to say that I recently helped to win a malpractice case which was defended by this society and this point came up, and one of our radiographs was ruled out. Picture No. 21 was the one ruled out. This ruling of the higher

court should, I believe, in x-ray work have some exceptions.

Things now often have to be changed to correspond to the later and modern ideas. For instance, if we were to rewrite our stomach anatomies today and have them correspond to the x-ray findings, we would put the bottom of the stomach on a level with the anterior superior spinous process of the ileum, the x-ray showing a normal stomach even below this point.

It is, of course, true that stereoscopic x-ray work makes a radiograph stand out better and gives the roentgenologist the view he sees in a perfect fluoroscopic examination. It, too, in a way is a comparative proposition and might be ruled out by the court and it seems that if there is any place where comparative evidence should have a place, it is in x-ray cases where it would be impossible for even a specialist to make a positive diagnosis without the corresponding normal part for comparison.

The April, 1915, *Annals of Surgery* has an article by Dr. John Douglas which shows very nicely by means of the x-ray both the normal and the abnormal before and after correction of the abnormal. These wrists are side by side and one can readily see the displacement. While in this case the difference is quite marked and could be determined without a comparison, if the bones were only subluxated having the normal there for comparison would make it very much easier.

*Read at the sixty-fifth annual meeting of the Illinois State Medical Society at Springfield, May 20, 1915.



Fig. 1. The right and left shoulder joint on the same negative. In this case it would hardly be necessary to have taken the left shoulder for comparison because the disease is so apparent and yet with the two side by side your patient is able to understand that something is wrong. In the case in point, however, the knowledge was wasted because the patient is

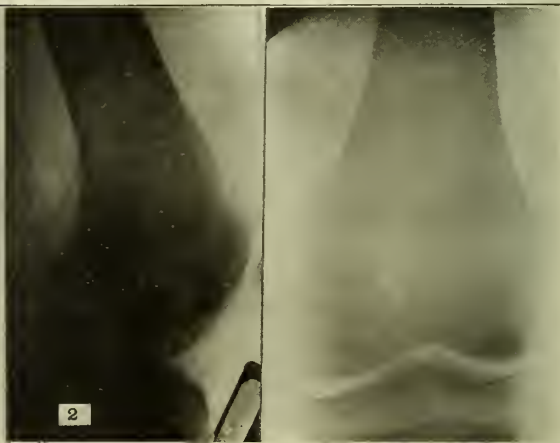


Fig. 2. This shows a bullet imbedded in the external condyle of the femur, both views are on an 8x10 plate. These views tell one at once that the bullet is imbedded in the bone and the surgeon must be prepared to enter the bone to remove it.

now having the disease treated by a "Chiro," who is adjusting her spinal vertebrae.

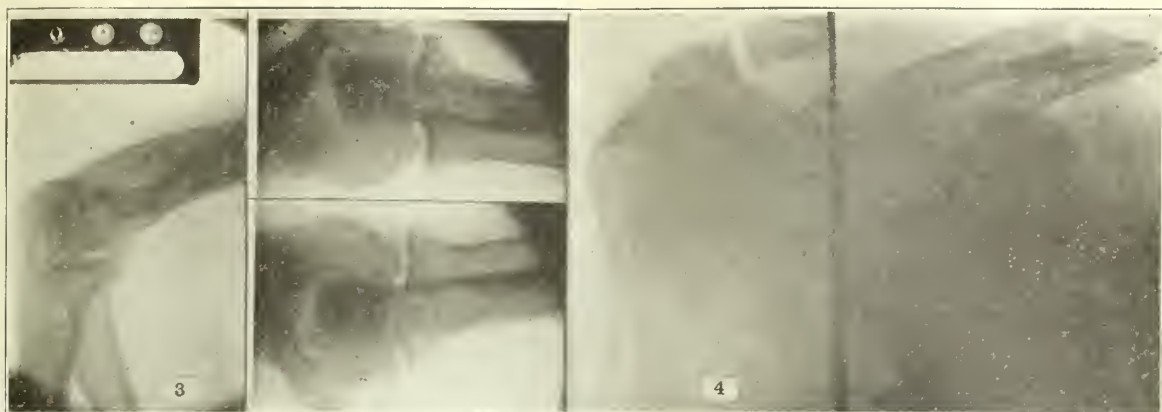


Fig. 3. Is a right and left normal elbow side by side and a lateral view of the joint which is supposed to be injured. By a close study of this plate in view box and comparing both sides we were unable to find any difference.

Fig. 4. Shows simply a dislocated shoulder compared with its normal fellow on opposite side. It is only conclusive evidence to be presented to the patient.

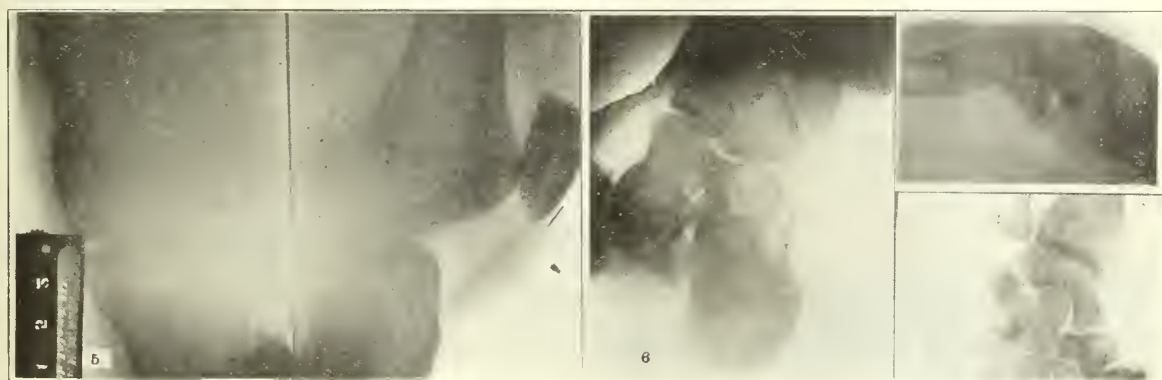


Fig. 5. This shows a lateral and anterior view of knee joint. Lateral view shows half a needle near lower edge of patella. Anterior view does not show the needle at all and yet it is a fairly good radiograph of the knee joint.

Fig. 6. Shows a foot, elbow and wrist all on one negative; all three joints were injured in a fall at same time. It is important to show all injuries together and they can usually be arranged on one negative and one's plates are not quite so apt to be mixed.



Fig. 7. Shows fracture through the surgical neck of humerus compared with normal on opposite side.

Fig. 8. Shows needle lower end of femur from two directions on same negative.

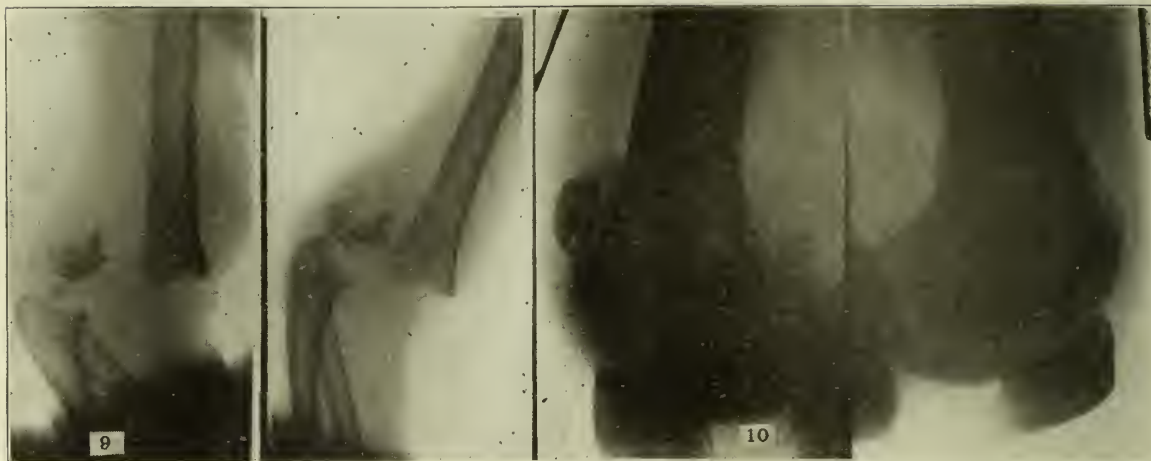


Fig. 9. Shows fracture of lower end of humerus above condyles; two views on same negative.

Fig. 10. This shows knee joint with four loose bodies, one of which locked joint at right angle compared with normal knee opposite side. It was necessary to open joint to correct deformity and four bodies were removed with perfect knee resulting.



Fig. 11. This shows right and left foot with fracture of os calcis left side.

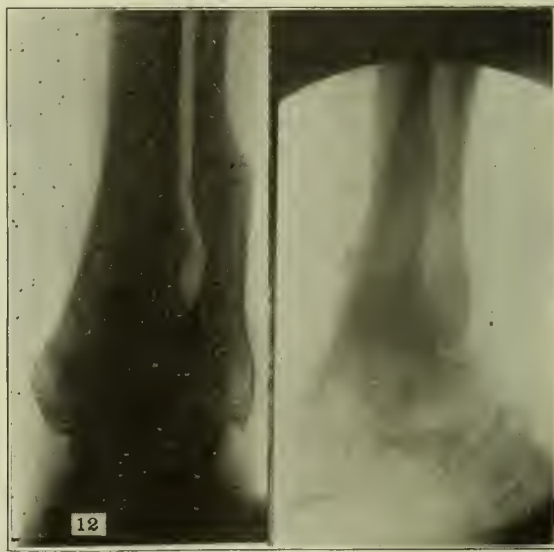


Fig. 12. Shows anterior and lateral view of an old fracture of tibia and fibula.

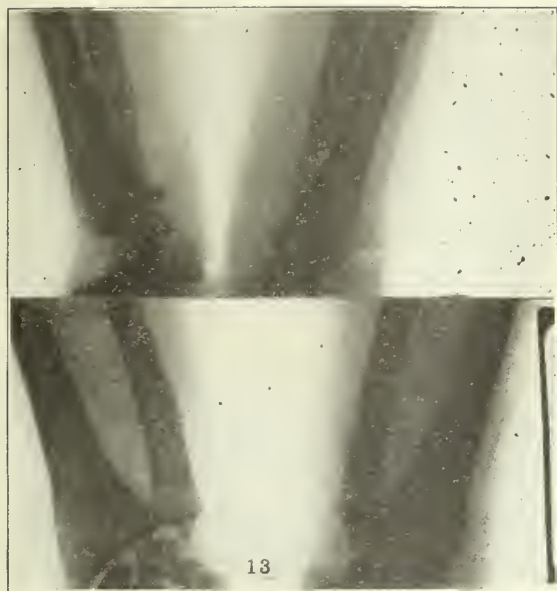


Fig. 13. Shows a very slight fracture at lower end of radius which would be very difficult to find without the normal radius on opposite side for comparison. In this injury a small piece of bone was broken loose. While this fracture might never have given much trouble even if we had not located it, yet the inference is the same. Had a piece of bone the same size been broken off inside the joint, the joint would be crippled until it was either removed or absorbed.



Fig. 14. Shows an anterior and lateral view of a fracture of the tibia. One might be deceived if he had only the lateral view to go by.

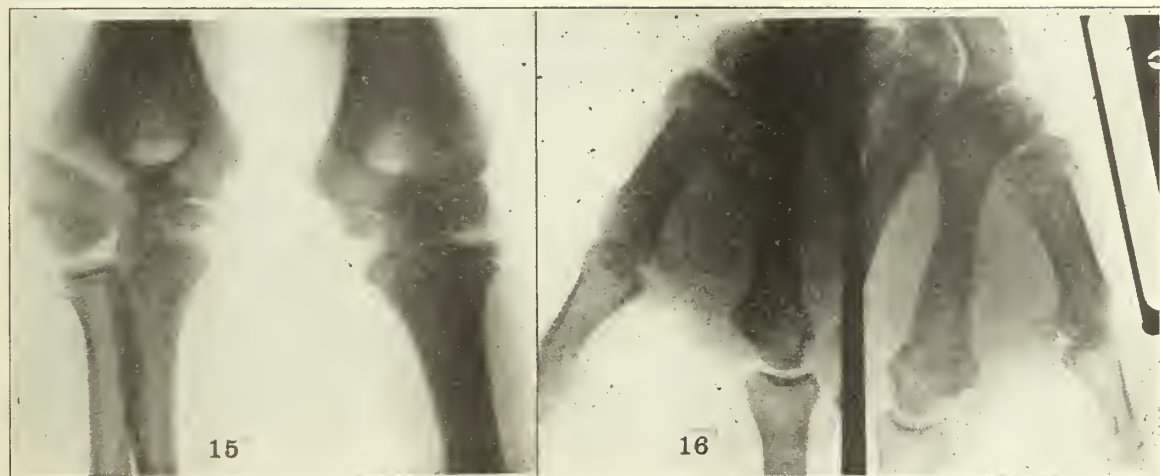


Fig. 15. Shows fracture of external condyle of humerus compared with external condyle in normal arm.



Fig. 16. Shows fracture of the thumb from two directions nearly the same.

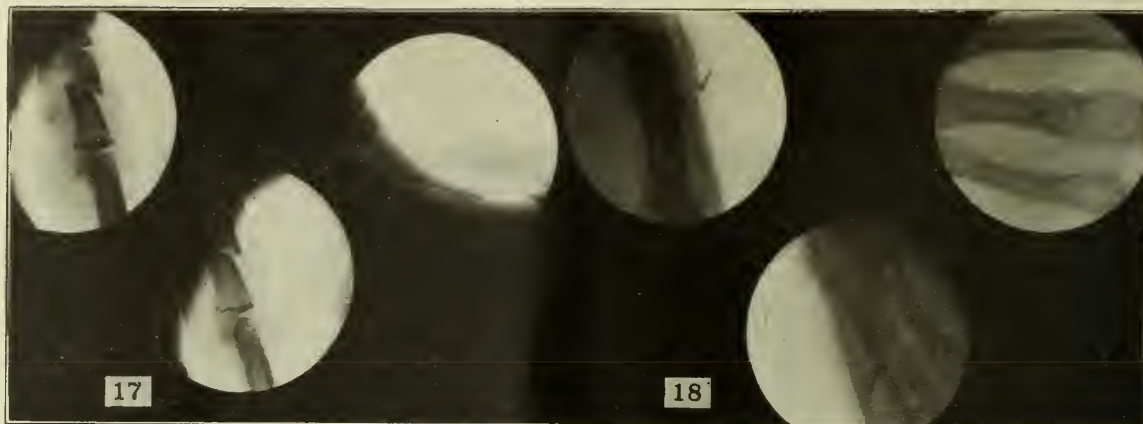


Fig. 17. This shows fracture of finger from three different directions on same negative.

Fig. 18. This shows same finger after wiring.



Fig. 19. This shows fracture of lower end of humerus from two directions.

Fig. 20. This brings out the importance of taking x-rays from more than two different directions in cer-

tain cases. If only one and two were taken, one would be sure that the eye of this needle was at least under the periosteum, but view No. 3 at different angle shows clearly that it is well away from the bone.



Fig. 21. Shows a normal shoulder and a fractured dislocation of the opposite humerus. This is the case which went through court and was won by the Illinois State Medical Society. In this plate we carelessly placed patient on negative wrong. It could have been printed half at a time and placed right side up, but we thought it best to take it from the negative just as it occurred on negative.* This particular negative the one being passed around was the one that was ruled out because it was comparative evidence.

Fig. 22. Shows a normal with a resected shoulder joint. This view is interesting because it shows the positive regeneration of bone without transplantation of bone. The head and about five inches of the upper end of the shaft were removed some time in the fall of 1913. The bone was sawed off straight across. It now shows a new strip of bone about half the distance.

*In the halftone both humeri are right side up, the x-ray print having been cut apart and rearranged as were some others.—Ed.

KEEPING THE CHILD NORMAL.*

WM. O. KROHN, M. D.,

CHICAGO.

This subject is an educational as well as a medical one. It involves not only a knowledge of the laws of his mental, physical and moral growth, but also involves the necessity of supplying the child with the environment in the home, at school and on the playground that will best conduce to the natural unfolding of his mental, moral and physical life.

We cannot proceed a single step in our inquiry as to how to keep the child normal unless we know what the child is, physically, mentally and morally, at the various stages of his career. What is he at birth? What is he at six years of age when he knocks at our schoolroom door? What are the various stages of the progress of his unfolding?

In the first place, with reference to the physical growth of the child, growth focuses for a time upon one set of organs or functions, then upon another, until the whole body is developed; but all parts of the body do not grow at one and the same time. The body grows first in length, and then in girth, in breadth and depth of chest, in breadth and height of forehead, in breadth and length of face. Furthermore, all children unfold their physical powers in exactly the same order, the difference between children of any age consisting in the fact that they do not grow at the same rate.

To make a special application of this well-known fact of periodicity in physical growth, let us observe the development of the muscles of the arm. The muscles of the upper arm—those concerned in the functioning of the shoulder joint—are ripe and ready for training at least a year and one-half before the muscles of the fingers. The muscles of the shoulder mature for training six months before the muscles of the elbows, and these in turn five to eight months before the muscles of the wrist, which are ripe and ready for training from three to six months before the muscles of the fingers. When we insist that a child shall begin to write by means of the finger muscles only, with a small pencil, in narrow spaces on ruled paper or a slate, we run directly counter to the principles of growth

and development that Nature has so plainly written in his constitution. Must not education, to be education at all, be in accord with these principles rather than in opposition to them? The child of six years, during the first days of his school life, chooses to make large, whole-arm movements, rather than little minute movements of the finger muscles. At first he requires almost an acre of blackboard space in which to write a few sentences. We must first train the large shoulder muscles before attempting to burden the tender undeveloped finger muscles, which are really injured by too such early strain and too involved activity.

Just as the body unfolds by stages, the mind also develops in the selfsame way—by stages—by periods—by epochs. The first of these periods is known as the period of the growth of the powers of sense. At birth, only two senses are operative, only two “windows of the soul” are open to receive the impressions Mother Nature has to bestow upon him—the sense of touch and the sense of temperature. Shortly after birth the sense of vision, then hearing, later taste, smell, rotation, joint and tendon, and the rest of the fourteen or fifteen senses with which we are endowed are added. During the first months and years of child-life, the senses must be permitted to act freely in order that later mental development may be full and complete. This is what we mean by “cultivation of the observing powers.” All of the raw material of thought, of memory, imagination, judgment, reasoning, is supplied by the sense experiences. We do not have to teach the bird to fly; we simply *let* it fly. Neither do we have to teach the child how to observe; we should simply *let* him observe. But we must so environ him with natural objects, that he will have ample opportunity for the exercise of his powers of observation. Thus, and thus only, will the proper basis be laid for later mental development. The games and elementary science work in most kindergartens and in our best primary schools are in line with this natural law of growth.

The second epoch in the mind's process of unfolding is the memory stage. This is the period when the child is characterized by a prodigious power of remembering detail. A single hearing of rhyme or rule, of song or catchy phrase, is sufficient to insure its correct repro-

*Read before the Chicago Medical Society, May 5, 1915.

duction. We all are aware how much more difficult it is for us now to commit rhymes or rules than it was during our second or third year of school life.

The third epoch is the period of the growth of the imagination. Children love to live in a world of make-believe; they love to play circus, church or school. How easy it is for the child to assume the role of Davy Crockett, Daniel Boone, Robinson Crusoe or Buffalo Bill! During this period there is developed a mania which frequently occasions grave concern to parents. I refer to children's lies. Now, the lie of the child, it must be remembered, is by no means the same despicable moral offense as is the deceitful lie of the adult. It grows largely out of his desire to excite wonder. It is a bit of puerile experimentation. He tries it, and, if it works, he tries it again; if not, he quits. But in these roving of the imagination he is not attempting primarily to deceive. The following is a case in point: Little Harold has listened eagerly to an account given by his father of the method by which the color of a plant's blossom (the hydrangea), each succeeding year, may be altered by changing the nature of the soil, by mixing it with sand, iron filings or black muck. Suddenly he exclaimed, "Oh, papa! I saw an apple tree today (it was in the fall of the year) with blossoms as blue as blue can be." "Where was it, Harold?" "In Boston," answered the boy. (Boston was thirty-two miles away and the boy had not been there for more than a year.) "How fortunate," said the father, "for I am going to Boston tomorrow, and I shall take special pains to see that tree." "Yes, but they had a big storm this afternoon, and it blew all those blossoms off."

The fourth period is characterized by the peculiar activity of the powers of judgment and comparison. (Instinct to trade or dicker and form judgments of value.) This in turn is followed by the period of curiosity. Curiosity must be properly developed. No child whose curiosity is throttled and starved will ever become a good reasoner. He must first ask questions and reasons of others in order to be able to ask questions and reasons of himself. The last faculty to develop is reasoning.

I have thus outlined the periods of mental development, for the purpose of showing that a

well-organized course of study—a well-planned environment, if you please—must be in harmony with these processes of development in order to be successful. More depends upon the order of studies assigned than upon the contents of the studies themselves.

In some schools seven or eight years are still devoted to the study of arithmetic; yet we know that all of arithmetic can be taught the child, and better taught, in less than three years if placed at the proper stage of the child's development.

The time to educate any faculty is at the time that particular faculty is most rapidly unfolding. The time to cultivate the observing powers of the child is when the senses are most keenly alert, are most prominent in mental growth; the time to educate the memory is at the period of the child's life when its memory acts with greatest facility and accuracy. The time to train the imagination of the child is while he is manifesting his mania for the world of make-believe, as evidenced by his love for fairy stories and the like. Those studies that appeal to curiosity and reasoning should come at the time that these periods are undergoing their greatest growth.

Furthermore, it must be remembered that the child possesses at birth every brain cell with which he is ever to be endowed; no brain cells are added after birth. If we desire to prevent any of his brain cells from dropping out from disuse, suffering from atrophy, we must see to it that at the proper time, at the proper stage in the career of his development, every line of approach must be made, every pathway of the brain must be utilized if we wish to develop a rounded-out perfected type of individual.

Some important discoveries have been made with reference to fatigue and its influence upon mental and physical development. Fatigue is a physical poison, and bodily fatigue always induces mental fatigue. The nature of the chemical poison generated by fatigue has been investigated by the Russian chemist, Wedensky, as well as by Maggiore and Mosso, in Italy. Overstrain at school, by producing fatigue, may be the occasion of such destruction and disintegration of bodily tissue as to cause serious and permanent mental defect. The best period of the entire day, both with respect to mental quickness and mental vigor, is between the hours of 8 and

10:15 o'clock in the morning; the worst is between 11 and 12 o'clock. The period between 1 and 2:30 o'clock in the afternoon is the third best, while that between 3 and 4 o'clock is second best of the entire day. The heaviest school work should be assigned to the hours when the child's mind acts most vigorously and with the greatest quickness, and the lightest work should be so arranged as to come at the period of greatest mental depletion.

Because of the violation of the laws of fatigue, many children, who are compelled to work for long hours in factories, become maimed for life and are thus drafted into the army of dependents who must be supported by the state. In the large stamping-works and can factories, scarcely a day passes but some child is made a helpless cripple. These accidents usually occur after 3 o'clock in the afternoon. The child that has begun his work in the morning with a reasonable degree of vigor, after working under constant pressure for several hours, at about 3 o'clock becomes so wearied, beyond the point of recovery, that he can no longer direct the tired fingers and aching arms with any degree of accuracy. He thus becomes the easy prey of the great cutting knives, or of the jaws of the tin-stamping machine, a dependent step-child of the state.

The vision of a half million school children has been tested. Some years ago, under my supervision, visual tests were made upon 38,000 school children in Illinois, and these tests revealed positively the fact that defects in vision increase from grade to grade with the increase of school work. Eleven per cent of the children of our public schools have defective vision. This in itself would not be so serious were it not for the fact that defective vision eventually causes nervous disorders in any child. Furthermore, it is a rule that mental stupidity in children is practically always associated with defective hearing. The dull children in the school are, in 99 out of 100 cases, sufferers from defective hearing. We owe it to all children to examine their hearing as well as their vision. Nineteen per cent of the pupils in the public schools have defective hearing in some degree, in one or both ears. It does not seem to be a well-known fact that impaired hearing is so common. Children thus affected have been accused of being lazy,

listless, inattentive and stupid, when, in fact, it was the ears alone which were at fault. No physician, teacher or parent, or other person interested in the welfare of children can afford to lose sight of the fact that the vast army of those suffering from nervous diseases is greatly augmented by subjecting the tender and immature nervous system of young children to the almost constant excitement and occasional over-pressure and nervous strain attendant upon certain arbitrary, cast-iron requirements in some schools. How can the influences playing such havoc with the nervous system of children be guarded against?

Physicians and teachers must know that the nervous system of the child differs very materially from the nervous system of the adult. They must be told that the child, especially in his nervous organization, is not a "little man"; he is not simply a "vest pocket edition" of an adult—he is different in kind as well as degree. His nervous system is structurally and functionally immature; it is excitable, unstable and under feeble inhibitory control; the sources of reflex irritation in the child are many, and the nerve centers discharge their force more fitfully and readily than in the adult. The period corresponding with the onset and establishment of the reproductive function in girls is a time when they are especially predisposed to nervous disease.

With children of good physical constitution, working within the limitations of their proper grades, there is almost no danger that a moderate amount of school work will in any way assist the development of neurotic disease, provided always that the hygienic conditions of the school, especially the light and ventilation, are good. But the strain of even ordinary school work affects children of poor physical development (many of whom are, unfortunately, precocious) very differently. A large number of these children, by reason of bad heredity, are neurotic, poorly nourished and anemic, and many of them have tuberculosis, a rheumatic or syphilitic inheritance; while others, from accidental causes, such as bad hygiene, improper food, etc., are below the normal in physical development. The nervous systems of such children are in a condition of malnutrition and are, therefore, not capable of doing the ordinary work of their grades in the public schools; and, if they are

permitted to do this work, or if, as is often the case, they are encouraged to push forward into higher grades than the one to which their years and strength should assign them, disastrous consequences will surely follow, and their nervous systems may be injured beyond repair.

Such children may develop chorea, hysteria and other neuroses.

Again, parents should beware of the danger of parading children before the public in early childhood. How sad to see the little child, unduly excited, robbed of sleep, worried with anxiety, attempt to sing a song, "speak a piece," or do a solo dance at a public evening entertainment. *When will* parents learn that *precocity* is an abnormal condition in the human infant. *Precocity is as abnormal as dullness.*

In conclusion, it has been my purpose to suggest that it would be more economical to keep the child normal than to attempt to correct his abnormalities after he becomes a dependent or delinquent. Success in keeping the child normal is only assured when we follow the natural laws of development that are written so plain in the constitution of every child. All children grow in exactly the same order. This is true of both physical and mental growth. The differences in individual children lie in the fact that they grow at different rates. It is necessary that every physician, parent or teacher should know these fundamental principles of growth in order that the child's physical, mental and moral health be conserved. I am more a devotee of social economy than I am of social pathology. I believe that it is the inalienable birthright of every American child to be entitled to a development into the best type of citizenship possible; best physically, best mentally, best morally. I say best physically first, because without good well-ordered physical development, it is impossible to have the highest type of mental achievement, and without the physical and mental, it is impossible to have the highest type of moral development. In dealing with children in seeking to promote their growth normally, it is necessary to open our hearts as well as our minds. The educational guidance of the child is not only a matter of intellectual grasp but the solution of its problems involves the coming into loving, conscious, personal contact with the child that

we are seeking to develop into the best type of citizenship.

Great heart loveth a little child;
No matter how ragged and dirty, he
Opens his heart if a child it be.
He loves them all. They hold the key
To a heart for others all mystery.
Great heart loveth a little child.

Great heart loveth a little child;
He knows them all and they all know him;
To them he never seems to be grim
Or gruff or grouchy. They all know his whim.
Feeling that love fills his heart to the brim.
Great heart loveth a little child.

And this:

O'er wayward childhood wouldst thou hold firm rule,
And sun thee in the light of happy faces;
Love, hope and patience, these must be thy graces,
And in thine own heart let them first keep school.

SOME PRESSING HEALTH NEEDS IN ILLINOIS.*

C. ST. CLAIR DRAKE, M. D.
Secretary Illinois State Board of Health.
SPRINGFIELD, ILL.

It is a trite and hackneyed statement that the art of preventive medicine has progressed with giant strides—that the demands upon public health agencies are infinitely greater than they were a decade ago.

The reasons for these increased requirements are readily seen. Sanitary science has experienced almost spectacular growth. Our conceptions of the causes—and consequently of the prevention of disease—have emerged from superstition and speculation to demonstrable fact.

With this scientific advance, there has been a widespread popular interest in matters pertaining to health until there are now, in every community, certain intelligent individuals who appreciate what public health bodies can do for the protection of the people and who demand service commensurate with our knowledge.

This intelligent and interested public, incidentally, has become recognized as a valuable agency not only in encouraging observance of public health mandates; but in creating the interest and sentiment necessary to the enactment of new and progressive laws and ordinances.

In view of these changes, governmental health

*Read before the Section on Public Health and Hygiene, Illinois State Medical Society, May 19, 1915.

agencies have found it necessary to radically change their plan and program of activity. The health departments which have not seen the handwriting on the wall and which have not forged steadily and rapidly forward, are not fulfilling their present obligations. The health department which was satisfactory, or even exceptionally efficient, a few years ago, may be hopelessly deficient today and that without actual retrogressive step.

The requirements imposed upon governmental health agencies today are these:

1. They must so readjust their machinery as to adopt and utilize the important developments of sanitary science. This means laboratories and other technical equipment and the creation of departments for which no need existed in the past. It also means the employment of men of special training and ability.

2. They must recognize the enormous value of popular interest in public health matters and must develop the relatively new, but vitally important function of popular education.

This cannot be accomplished merely by type and printer's ink. Those who need education most are often not those who can read. Public health education must be carried not only into every county and community; but it must be taken personally into the very homes of the individual. Such a plan requires such practical agencies as community nurses, interesting and graphic exhibits, public lecturers and field workers.

3. The state health department cannot accomplish its purpose by remaining merely a central office ready to render aid when such aid is requested. Constructive health work demands active work in communities which may have no realization of their needs and which would never request help. The department must reach out into the individual communities by personal representation; must ascertain the existing sanitary conditions and, co-operating with and encouraging local officials, must meet emergencies as they arise and,—far more important,—must direct their activities so that such emergencies may be prevented.

For this purpose, full-time district health officers, representing the state in their individual localities and yet constituting a mobile force which may be brought together in any part of

the state in time of need, becomes a very important part of our public health machinery.

4. Finally, the state health department should be the source of assistance, help and advice on every subject which may confront the local health officer in the performance of his duties and should be in position to give definite information on every health subject which may interest the private citizen. This means, of course, the consolidation of all state agencies having to do directly or indirectly with health into one general department or, at least, the co-ordinating of the various agencies so that they may operate smoothly under one general head.

It must be admitted,—however reluctantly,—that, while, at one time, Illinois stood in the forefront in governmental health activities, it has not kept pace with progress. While the state may not have stepped backward, it has not stepped forward during the period in which rapid advance has been the spirit of the time.

To the physicians of Illinois who are conversant with the facts, this statement cannot be construed as in any sense a personal criticism. As is generally known, the State Board of Health, originally created as a purely sanitary and public health organization, has been so burdened and almost submerged with new and extraneous duties, that these secondary functions have come to occupy three-fourths of the time and attention of the members, officers and employees of the board. The public health functions have naturally suffered through the ever-growing demands of such duties as examination and licensure of physicians. The situation is one which now requires,—as it has required,—radical readjustment.

The conditions as they exist in Illinois at the present time, are familiar to you all. You are also fully informed as to the possibilities of public health administration as carried out by more progressive and more fortunate health organizations. I use the term "more fortunate" advisedly. Public health is now recognized as a purchasable commodity. We can have as much of it or as little of it as we choose to buy and the most efficient health department in Christendom cannot secure more than good value for the money which the people, through their chosen representatives, empower them to expend for health protection.

In the few moments at my disposal today, I propose to ignore both existing conditions and ideal conditions and to confine myself to a frank discussion of what may be accomplished in Illinois under our present laws or with the aid of such legislation as may reasonably be expected to be enacted.

The duties of the State Board of Health may be broadly grouped as the purely public health functions and those of medical examination and licensure. The subdivisions of the two groups are manifold. The two functions necessarily encroach upon and impede one another and yet, the combination under one general head is the natural one. Certainly, the idea of their separation into individual state departments is entirely contrary to the policy of the present administration and to the principle of co-ordination now regarded as essential to efficient and economical administration.

The State Board of Health should have charge of both of these public functions; but they should be definitely separated into individual departments each with its own department head and its own machinery.

A plan of reorganization of the State Board of Health and its co-ordination with other state agencies having to do with public health, has been submitted by the board at the request of the Economy and Efficiency Committee of the General Assembly, which has endeavored to co-ordinate all existing departments and bureaus for purposes of efficient operation. While such a plan may not be written into the laws at the present session, it will unquestionably reappear at future sessions. It is sufficiently eminent to merit our serious thought and attention.

This plan contemplates a Department of Health and a Department of Licensure, the former of which would incorporate all of the functions now performed or contemplated by the State Board of Health, directly pertaining to health and sanitation, and also certain functions now undertaken by other state bureaus and departments.

Such an organization would include a bureau of medical inspections, with divisions of contagious disease control, of tuberculosis, of child hygiene and school inspection and would include diagnostic laboratories. It would also include a bureau of vital statistics, having to do with birth

and death registration and with the transportation and disposal of the dead.

Among the newer and more radical departures, but one absolutely essential to efficient public health work, is contemplated a bureau of sanitary engineering, dealing with water supplies, stream pollution, sewage and waste disposal and sanitation of public buildings. This bureau would require engineering and research laboratories. It would perform certain functions now imposed upon the State Board of Health, together with others now performed by the State Water Survey and the Rivers and Lakes Commission.

Inasmuch as the most important consideration of foods and drugs, from their public standpoint, lies in their relationship with health, and, inasmuch as the supervision of the production and handling of foods is the duty of all local health departments, the Department of Public Health would have charge of the enforcement of the food and drug laws of the state, particularly in their public health aspects. This would necessitate the creation of a bureau of food and drug inspections together with suitable food laboratories, taking over to a certain extent at least, the duties now imposed upon the State Food Commissioner and the Food Standard Commission.

The second major department,—that of Medical Registration,—would be charged with the examination and licensure of physicians, other practitioners, midwives and embalmers, as now performed by the State Board of Health, and the examination and licensure of those practicing other professions akin to medicine or regulated for sanitary purposes, such as nurses, pharmacists, dentists and,—for sanitary purposes,—the barbers. While such a plan would not disturb the integrity of the existing examining boards, it would co-ordinate their activities on an efficient and economical basis.

Another important division of the Department of Medical Registration would be a bureau of records and documents, having to do with the examination and issuance of documents and with the correspondence, records and accounts of all of the various divisions, departments and bureaus of the board.

Whatever the fate of this general reorganization plan, there are other pressing needs in the public health administration of the state.

In line with the policy of carrying the in-

fluence of the board personally into every community, the state should be divided into a number of sanitary districts, each with its own full time, medical health officer—a man of proper qualifications, properly compensated and not permitted to engage in the practice of medicine or in any other vocation. The district health officer will have charge, under the State Board of Health, of the general health supervision of his district and it will also be his duty to encourage public health organization and development in the various communities and to carry out a campaign of public health education.

He will enforce the laws and rules of the board for the control of communicable diseases; will settle questions of disputed diagnosis; will enforce the provisions of the birth and death law and, in the event of the enactment of the now proposed law, his services in this direction will be invaluable. He will also make inspections of country schools in which, in most instances, there is more urgent need for sanitary supervision than in cities. Until there shall be created a Department of Sanitary Engineering, as I previously suggested, the district health officer will be expected to perform the functions of such a department, as far as he is able, in his own district. He will be expected to advise communities relative to farm and city wastes, sewage disposal, water supplies, construction camps, picnic groves, summer resorts and amusement places, including the now widely prevalent nickel theaters.

One of his most important duties will be to encourage the adoption of sound health ordinances and the appointment of competent health officers, with reasonable compensation, in the various towns and cities of his district. The situation of the average Illinois community as to its health department is now deplorable. The 100 largest cities in the state, give an average salary of approximately \$300 per year to their health officers, while some communities pay a salary as low as \$5 per month and some pay nothing at all. It is not to be wondered at that municipal health is so frequently neglected. The missionary field for the representative of the State Board of Health in this field is well nigh unlimited.

Finally, the district health officer must give attention to the subject of public health education. He will be expected to give public lectures

for churches, societies, farmer's institutes and similar organizations; to reach the teachers and pupils of the schools of his district and to hold frequent conferences with health officers and public officials relative to public health methods and procedures. He will encourage vaccination against smallpox and typhoid fever and will urge the utilization of other preventive means offered by the State Board of Health.

It is confidently expected that this important part of the state's health work can be established within a very few months. The state has already been divided into five districts. This is not a sufficient number, but is all that can be expected to be covered with available appropriations.

Within recent years, the board has gradually increased its service in supplying preventive and curative vaccines, sera and other like agencies. Diphtheria antitoxin and typhoid vaccine have been provided without charge, to rich and poor alike, for some time. Quite recently there has been begun the distribution of nitrate of silver in convenient containers for use in the prevention of ophthalmia neonatorum. By July 1, when the appropriations made by the present general assembly become available, it is expected that smallpox vaccine will be distributed free.

This last provision is especially necessary on account of the continued and increasing prevalence of smallpox throughout the state. Last year there were some 8,000 cases, directly or indirectly affecting 10 per cent. of the inhabitants—and these cases were chiefly among school children, indicating that the younger generation is largely unvaccinated. Only the mild type of the disease saved the state from disastrous notoriety and tremendous business injury.

As it is, the disease, due directly to failure to vaccinate, has imposed great financial burdens upon various communities. If general vaccination cannot be encouraged otherwise, I would seriously suggest that legislation be enacted placing a special tax upon unvaccinated persons, the revenues raised in this way being devoted to the building and maintenance of smallpox hospitals.

In connection with its extension of service in distribution of curative and preventive sera, the State Board of Health has enlarged its laboratory service to include, in addition to examination of specimens from diphtheria, typhoid and tubercu-

losis cases, the Wassermann test and complement fixation for indigent persons. There will also be opened this week two branch laboratories for the prompt diagnosis of diphtheria—one at Mount Vernon, for the convenience of the southern part of the state, and one at Chicago, for the northern section of the state outside the city of Chicago. The laboratories will carry out examinations of repeated specimens from diphtheria cases to determine the proper time for the raising of quarantine.

Within the past year, the State Board of Health has gone as extensively as its appropriations would permit, into the investigation and inspection of dairies and milk handling plants and it is desirable that this should be greatly extended, especially among those situated outside the corporate limits of the larger cities. At the present time, when a municipality excludes milk of questionable sanitary quality from its markets, the producer, residing outside the corporate limits, sends his rejected supply into some other near-by and unsuspecting community which does not maintain milk inspection service. In this way, the protective measures employed by the larger cities, actually endanger the smaller communities. This can be overcome only by thorough and systematic dairy inspection by the state.

Recognizing the enormous value of popular education in public health work, the State Board of Health must engage largely in educational activities. In so doing, the board must have the hearty co-operation of the various extra-governmental health agencies which wield a wide influence over the state, such as the Illinois State Association for the Prevention of Tuberculosis, the State Federation of Women's Clubs, the Illinois State Conference of Charities and Correction, the Illinois State Medical Society, through its department of public health and hygiene, and the Illinois Association of Graduate Nurses, now interested in the extension of community nursing service.

To meet this need for popular education, the board has changed the character of its larger monthly publication from one entirely of professional and technical interest to one containing material which will appeal to the layman. All of the publications of the board dealing with preventable diseases, infant feeding and similar

subjects are being rewritten in harmony with the most recent medical knowledge and are being made as simple and attractive as possible.

The public health exhibit, which has been created during the past year and which has already traveled extensively over the state, is being shown in the exhibit hall at this meeting of the State Medical Society and it is hoped that this exhibit is but a forerunner of a traveling exhibit which may visit every town and city from one end of the state to the other, accompanied by public lectures and introduced through the co-operation of County medical societies, of local civic and public health organizations.

It is not betraying a State secret to say that birth and death registration, as it has been carried out in Illinois in the past, is practically without value. A new birth and death bill has passed the senate at the present session without a dissenting voice and is now on second reading in the house. The prospects for passage are said to be good.

If this law is enacted it will place Illinois finally in the list of birth and death registration States and will create a state department of vital statistics which will compare favorably with those of any other commonwealth. The director of the United States Bureau of Census has pronounced the proposed law as "a very excellent measure."

Briefly, this law will centralize the birth and death records of the State in Springfield and will make the location of sub-registrars so convenient in all sections of the State, that there will be not the slightest excuse for failure to comply with the law's provisions.

It may be interesting to you to know that the obligation of collecting the statistical information for the death certificate under this law, is imposed upon the undertaker, while the physician is called upon simply to certify the cause of death.

A distinct weakness in the powers of the State Board of Health, which has been very generally misunderstood in the past, is that legal technicality which deprives the Board of the right to revoke licenses of any physicians licensed prior to July 1, 1899. A law is now pending in the General Assembly, and gives promise of passage, which will restore to the Board jurisdiction over all licenses. What this will mean in the control of unprofessional conduct is readily seen.

One other department of work, largely neglected in Illinois, and in which it is hoped the State Board of Health may engage effectively, is that of child hygiene. It is hoped that the Board may not only undertake useful measures in this direction, but that it may serve to co-ordinate and assist local agencies that are working for the physical and mental advancement of children.

In much the larger part of the State, in fact outside but a few cities having well organized health departments, the hope for early and material progress in the adoption of measures for better safeguarding the health and lives of the citizens of Illinois, rests, as I see it, in immediate promotion of close co-operation between the various county and city medical societies, the women's clubs, the various civic welfare associations and the State Board of Health.

That such co-operation can be readily developed has been proven recently by the very general response of the county medical societies to a request from the State Board of Health, inviting them to lend aid in promoting an educational campaign for better registration of births and deaths. To an invitation addressed to the secretary of every county society, we received seventy-two replies and engagements to the number of 356 for showing our educational film in motion picture houses. The result of this one effort was regarded as especially significant of great possibilities by the State Board of Health.

Perhaps, when we have this co-operation and co-ordination of effort, all working in one direction, the tragically grotesque occurrences in public health administration will be less frequent. In one Illinois city, where a peculiarly severe epidemic had awakened the community to the need of public health activity, the employment of a health officer was decided upon as the first step. But in spite of the severe lesson the community had already received; in spite of protests of physicians and intelligent laymen; the public health destinies of the city were finally entrusted to a veterinarian and not to a physician or sanitarian.

In another community, where typhoid was prevalent, the board of health was notified, as is the custom, of the rules and regulations of the State Board of Health relative to that disease. The result upon the public health organization of the town was disastrous. Immediately upon

seeing that a penalty was imposed for the failure of the health department to perform its duties, the board of health resigned as a body.

These are but passing examples of the stumbling blocks in a program of sanitary progress. All this will be cleared away by co-operation and vigorous popular education.

Finally, the State Board of Health must meet two definite propositions:

It must be in fact a central agency for the collection and dissemination of up-to-date information of service to health officers and others interested in the promotion of public health and it must cover the entire field of public health.

Second, the Board must be prepared to supply counsel and advice in matters involving expert skill and knowledge. With such service it will save the various communities of the State thousands of dollars annually and will perform the infinitely greater service of reducing the sum total of human death and suffering of the people of Illinois to within something like reasonable limits.

SOME INFECTIONS OF THE HEAD AND THEIR CAUSES.*

J. SHELDON CLARK, M. D.,
FREEPORT, ILL.

It is an old and trite saying that "nothing succeeds like success." In this day and age he who wishes to succeed must needs have at his command a storehouse of physical energy of unlimited supply. How often do we see men who have prepared themselves at great expense of time and money for a chosen vocation and no sooner are they entered upon it until they are obliged to lay down their work on account of some physical incapacity.

It is in early life that most of the damage to our bodies occurs, and the port of entry is mainly the head. It is high time that this question of physical development should be considered by those who have to do with the welfare of the child. Boards of Education, and the system of teaching prevalent in our schools, have treated the child's head as though all it contained were a protoplasmic mass that is to be moulded and fashioned to suit various whims and fancies.

*Read before the joint meeting of the Medical Societies of the Counties McHenry, Kane, Winnebago and Stephenson of Northern Illinois, held at Rockford, Ill., February 9, 1915.

Our pedagogues must be reminded that there are structures in the head that if diseased, may in turn affect the whole organism.

One of the most important deviations from the normal, in so far as the head is concerned, is that found in mouth breathers. Any child who breathes through his mouth rather than his nose, does so either on account of nasal obstruction or from force of habit. Habit mouth breathing may follow some sudden stoppage of the

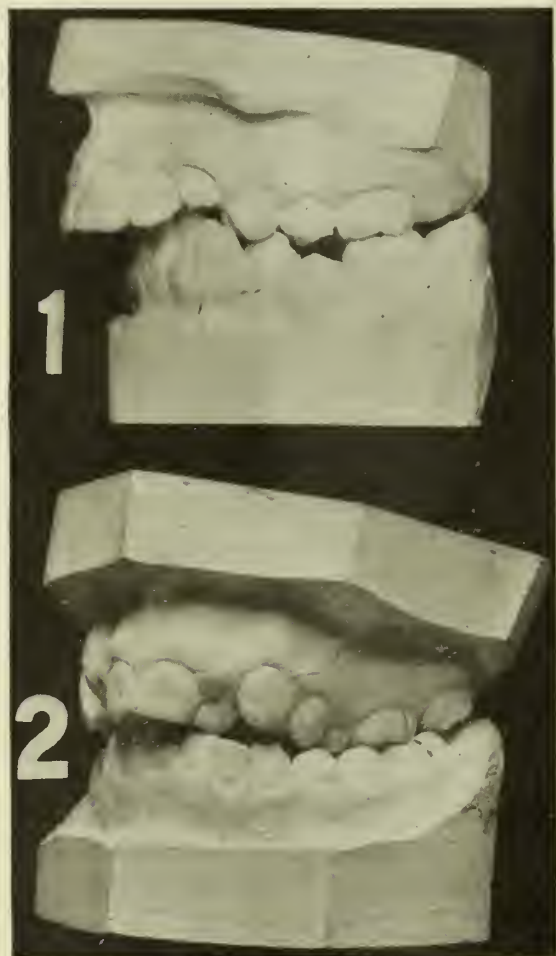
hard palate, neither does it press outward on the arches of the jaw, but it lies loosely in the mouth. The lack of this outward pressure and upper force of the tongue just mentioned, causes the upper jaw to be tardy in its development and, in fact, it does not attain the dimensions it should have. The teeth attain their ordinary size and number and must be placed on a jaw that is shorter and narrower than it should be. The lower jaw, however, develops in a nearly normal degree.

From this derangement of the teeth we have two varieties of deformities—either the upper teeth overhang, or the ones of the under jaw protrude. The upper teeth should normally overlap slightly in closing the mouth, but where they do to excess and, combined with a retreating lower jaw, we have then the picture of the characteristic facies known as the “rabbit mouth.”

In the second variety, where in addition to stuffiness of the nose, there is obstruction at the base and sides of the tongue, caused by very much enlarged tonsils, then the lower jaw is drawn downward and forward by muscular action in order to clear the mouth and fauces, and we have the type known as “wapper jaw.”

From an economic standpoint it is hard to estimate the cost of the damage that is done by reason of this one common defect, viz: mouth breathing. There is lessened physical and mental capacity and resistance to the various infections of the mouth, nose, throat, ear, bronchi and lungs is very much lessened. In mouth breathers the inspired air is not properly filtered and thereby a vastly greater number of bacteria gain entrance to the nose, mouth and throat, causing frequent local and general infection.

There are many causes other than pathological ones that make for malocclusion of the teeth. We might speak of hereditary tendencies, influences brought about through a faulty diet, both as regards bottle-fed infants and irregularities later on in childhood, such as too much of the sweetmeats, etc. Then the various traumas that are ordinarily met with. One very frequent being that received through thumb sucking in infancy; also the numerous falls in infancy, wherein the tooth germs are damaged. The case here shown in Figures 5, 6, 7 and 8 is fairly representative of what effect heredity plays in development. The model of the upper jaw



Figures 1 and 2.

nose; as from an acute cold in the head, or it may result from the desire to be continually talking, as is seen in some children.

What then occurs from this habit of mouth breathing? First and foremost there is a lack of symmetry and the proper development of the body. Not alone the head, but the chest, heart and other organs. When a child breathes through the mouth, the tongue does not lie against the

shows a perfect dentition (Fig. 5), while the model of both the upper and lower jaw (See Fig. 6), shows a perfect alignment. However, one will see that these perfect teeth are not in keeping with the general facial development of their possessor. (Figs. 7 and 8.) There is an eugenic cause for this inequality of relationship between the general facial development and that of the jaws and teeth; there being a great disparity in the anatomical development as exhibited in the parents.

In mouth-breathers the tonsils are habitually found enlarged and the seat of repeated septic attacks, along with the tonsils the entire structure known as Waldeyer's ring is involved in an attack. This includes the pharyngeal tonsil or adenoid structure in the naso-pharynx, the pharyngeal and lingual tonsils. Most of the attacks of sudden rise in temperature upon slight exposure to cold are caused by infection somewhere in the lymph structures comprising Waldeyer's ring.

Of the general systemic infections more easily acquired on account of physical abnormality and consequent impairment of general bodily tone, is tuberculosis. Most of the tubercular subjects who die at the age of 18 to 40 have secured their initial tubercular infection during childhood. Had they been normal as regards their capacity for intake of air there is no doubt but that they might have overcome the primary infection.

Rheumatism is one of the diseases that is most largely contributed to by oral sepsis of one sort or another, and in this we would include the other structures connecting with the mouth, as the nose and its accessory sinuses and the ears. I have seen remarkable subsidence in an intractable case of rheumatism follow the extraction of some old snags of teeth that were bathed in pus.

Mouth breathing has a further retarding influence upon the development of the nose. The growing child sleeps from eight to fifteen hours during a day. If, during this time, he lies with the mouth open, then the pressure that is normally exerted against the upper jaw is lacking, and there is not the normal widening of the jaw. This in turn affects the development of the nose, in that the vomer is pressed upward and out of place by the high arching of the palate. As a consequence there are irregularities within

the nasal chambers, enlarged and turgessed turbinals, deviations of the septum, etc. Now, if the nose were normal and we breathed as we should, the air would be sifted mechanically of its impurities and we would not be subjected to the repeated attacks of cold in the head, that do so annoy.

Continued turgescence of the turbinals may lead to their degeneration, and in turn an infection of the ethmoid cells with a concomitant



Figures 3 and 4.

asthma that makes living almost unbearable. Along with this the sense of smell is very much obtunded or is lost altogether. Many of our foods are palatable to us mainly on account of their delightful odors. With the sense of smell gone, the appetite wanes and physical stamina also diminishes with the lessened intake of food.

Along with infection of the ethmoid cells, usually the sphenoid sinus, the frontal sinus and the maxillary sinus become involved. The middle

ear and mastoid cells may be infected by way of the Eustachian tube. One of the greatest complications attending infection of the ethmoid labyrinth and sphenoid sinus, is that of optic neuritis, caused by infection gaining entrance to the sheath of the optic nerve. The optic nerve in its course through the optic foramen courses along the outer wall of the sphenoid sinus and the lateral wall of the last ethmoid cells. If this condition is allowed to persist, blindness may result. At other times, in acute attacks of cold in the head, a patient will complain of pain in and about the eyes, when it is not the eye or structures of the orbit that are affected, but rather the ethmoid cells that lie on the inner wall of the orbital cavity.

The frontal sinus is infected from below. The drainage of the frontal sinus is not of the best when once its structure becomes the seat of septic inflammation. The sinus early becomes closed off and there results an absorption of the contained oxygen; this results in decided pain over the frontal region, even though there may be no decided infection.

The antrum of Highmore is a large cavity within the upper maxillary bone that is connected directly with the nasal cavity through its normal opening which lies in the middle meatus of the nose. Infection of the antrum takes place either from the nose or from the mouth. Perhaps the greater part of the infections take place from the molar teeth. It is infection in the molar teeth which protrude within the antrum that gives rise to most of the dental infections. Pus in the antrum, in an appreciable quantity, gives rise to a pain and swelling that is characteristic. Therefore, the best prophylaxis looking to the eradication of antral disease is oral cleanliness and thorough dental supervision of the teeth.

Through the Eustachian tube we have another way by which oral infection travels. Most of the diseases of the middle and internal ear are caused primarily by some trouble in the mouth, nose or naso-pharynx. One quite prominent factor in producing acute otitis media, is the manner of blowing the nose that is indulged in by some people. You have all seen it. The possessor of an acute rhinorrhea will blow both nostrils in perfect unison, and with a clarion tone that would relegate the trumpet of Gabriel

to a seat in the back row of the celestial orchestra.

With infection of the middle ear there is a resultant inflammation that at first is serous, then hemorrhagic and later purulent. It takes but a few hours for the entire process to be developed. Ear-ache is a warning to one that there is trouble in the middle ear. In all such cases one should not prescribe "drops" for the ear without first having examined the drum membrane and be cognizant of the pathology going on in the middle ear. A few hours may



Figures 5 and 6.

mean a great deal to one suffering from acute otitis media. A timely paracentesis of the drum membrane will cut short the duration of the trouble, prevent pus formation and the possibility of antral and mastoid cell involvement.

The loss of hearing is also quite an important factor. In recent years we have heard a great deal regarding the conservation of vision, but very little has been said with reference to a plan for the conservation of hearing. Of the two ailments, I believe those unfortunates who

cannot hear or are very much afflicted with impaired hearing suffer more than those who are afflicted with poor vision or loss of eye sight altogether.

We have all seen children that are more or less troubled with a discharge from the ears. This trouble is looked upon by many as a matter of course. The public is being educated and the doctor must keep abreast with this education and not allow his cases of infections of the middle ear to go on to suppuration, without any notice other than the use of "ear drops" to alleviate the pain. As was said before, the early puncture of the drum membrane must be done, and you will be surprised at the ready healing, instead of the weeks, months and maybe years of discharging pus that may take place from ears in neglected cases.

the crypt. We, therefore, feel that a similar lesion is present in the tonsillitis preceding rheumatism and, as far as we know, this lesion differs in no way from that of acute lacunar tonsillitis. We regard the ulceration of the lining of the crypts as being the vulnerable point of entry of organisms from the mouth. It matters little, apparently, what organisms from the mouth have produced the lesion, for once the ulcer has formed, it is possible for any type of organism to gain access to the deeper tissues.

In regard to the removal of tonsils for supposed systemic infection we should be careful and make our diagnosis on good tenable grounds. Just because we happen to have before us a throat with tonsils protruding a considerable distance beyond the pillars, is not sure evidence that they are the source of trouble and of danger to their possessor. In looking for the cause of septic infection, do not forget the teeth, the nose,



Figures 7 and 8.

When we consult the statistics of brain abscess and find that in over 80 per cent the abscess in the brain is of otitic origin, then we may well regard with more concern these cases that in the beginning are only that of ear-ache following an acute cold in the head.

Let us for a moment study a little more closely the subject of tonsillar infection.

Dr. MacLachlan of the University of Pittsburgh was reported at the 1914 meeting of the American Medical Association to have examined into the histopathology of 350 pairs of tonsils that had been removed for various reasons and makes the following statement:

We have observed that when symptoms of acute tonsillitis are present, there is always a pathologic basis, as shown by the ulceration of the lining of

and its various sinuses and cells, the ear, the tear sac, the appendix, the gall bladder, or even an ingrowing toenail. Any one or all of these can be the source of the trouble.

Dr. John F. Barnhill of Indianapolis reported a case to the point at the Atlantic City meeting of the A. M. A. in 1914. A certain college professor had been so ill with heart disease for a long time that he could not carry on his work. He came into the hands of Dr. Osler, who went over him again and again and finally said, "Your tonsils are the cause of all your trouble." Dr. Osler advised that the patient be operated on thoroughly, but the tonsils were merely clipped. The illness continued over a period of two years. Dr. Osler had gone abroad and the patient consulted Dr. Janeway of New York,

who, after careful examination, told him the same thing. Then the patient's tonsils were completely enucleated and from that time on he recovered promptly and remained well.

Just the past week I was called in consultation on an interesting case of continuous and persistent rise in temperature as exhibited by a dentist living in a nearby town. This man had been for several weeks feeling more or less "done up," as he expressed it. He was tired, lacked energy to go about his work, and had noticed that he was carrying an unevenness of temperature. He entered the hospital for observation. Careful record of temperature was kept, and he was gone over from stem to gudgeon, with blood counts, smears, Wassermann, and all that long host of laboratory inquisition. Nothing was found. He replied that he never had sore throat or attacks of tonsillitis, and to the ordinary observer he had an innocent-looking pair of rather submerged tonsils. However, the anterior pillars were quite reddened and upon retracting one of them I was able to introduce a large mastoid curette into a pocket that was filled with foul septic detritus. Cleaning out this and other pockets of septic material at once relieved him of his symptoms. Later on these enormous crypts will fill again, and unless he has attention paid to them he will once more be suffering from septic absorption. Such tonsils should be enucleated.

It has been within the past decade that the true relationship between focal infection and systemic disease has been worked out. The tonsils are, perhaps, the most frequent seat of infection of any organ of the body. It is hard at times to trace a nephritis, a rheumatism, an endo, or pericarditis, neuritis, or an hypertrophy of the thyroid to an infection in the tonsil, but nevertheless such is within the range of possibility.

It oftentimes happens that the systemic infection comes on months after an acute attack of tonsillitis, and there is no connection made between the tonsillar infection and the latent disease. To recognize these cases is often difficult and at other times easy. Retained pockets of pus, detritus in the crypts, and in the supra-tonsillar fossa and behind the pillars of the fauces, account for the periodic attacks of septic

inflammation with the concurrent symptoms of systemic disease.

The submerged tonsil, the one that on cursory examination does not extend beyond the pillars, is the dangerous one. Aside from interference with breathing and phonation, the enlarged tonsil is not altogether the one to fear. In fact, the size of the tonsil has practically nothing to do with the liability to septic infection. The most innocent-looking tonsil may be the cause of periodic attacks of mild illness, with fever and general symptoms of infection.

Regarding the tonsil operation: Hudson Makuen of Philadelphia, an authority of recognized ability, says: "Few of us will doubt that the tonsil is one of the sources of systemic infection, but is there not a possible danger in the frequent reiteration of this fact?" The tonsil operation, in his opinion, is already too popular. He says that some of us do the operation for the simple reason that "if we don't do it some other fellow will." Another thing that makes the operation too popular is the teaching and the information given out that the removal of tonsils is an easy matter and that it can do no harm. As to the ease with which the operation can be performed: I have time and time again heard general surgeons make the statement that they would rather remove an appendix or drain a gall bladder than remove tonsils, and yet they will go ahead and chop off a part of the tonsil, get a severe and at times almost uncontrollable hemorrhage and charge ten or fifteen dollars for their trouble. Tonsillectomy is not an operation for the office, but should be done at the hospital where one is supported by the proper surroundings for doing surgical work. When one essays to take out tonsils in one's office the result is about as follows: A child, for instance, is most improperly and tenderly held by his parent or relative. He is so arranged that his legs and arms are working in true battering ram fashion. The patient may hold fairly still for an operator to use the guillotine and get off about one-half of the tonsil on one side and a miserable specimen of the other. The whole scene is one of confusion and disorder and the impression made, both on the patient and the observers, is one that does not redound to the surgical skill of the one who attempts tonsil work after this fashion. I know that such work is being done for I have

repeated instances where little ones are brought to me for secondary operations. The report being, in most instances, that the tonsils have grown again, and this time they are to be taken out "by the roots."

In regard to the harm that may be done in this matter of the removal of tonsils: That there is harm done no one will deny. First, as to the age when one may with a clear conscience advise tonsil removal. Dr. Joseph C. Beck has stated that he has noticed that where adenoids, and tonsils are removed in children under three years of age that there is an undue amount of fat produced and the children develop in a manner that would suggest disturbance of the internal secretions. It is the accepted opinion among laryngologists that tonsils or adenoids should not be removed before the fourth year of age.

Second, when one essays to do a tonsil operation, let him be thorough with his work. Attacks on the tonsil that result in the removal of only a part of the substance of the tonsil had better never have been begun. Again, I have seen throats in which the most utter disregard to normal structures had been shown. Uvula cut off, anterior and posterior pillars gone and the whole throat dry and looking as though a German 42-calibre siege gun had been somewhere in the neighborhood. Instead of a tonsillectomy having been done, it was rather a pharyngotomy.

In public speakers or singers one must be very careful in the work so that there are no constricting bands that will later alter the shape and contour of the muscles of the larynx. Again in the case of singers or public speakers, we must remember that these people have learned their art with their physical imperfection present, and if we alter this relationship, then we are apt to have a change in the tone production by reason of our surgical interference. It is by doing a clean enucleation within the capsule that we are rewarded with perfect phonation subsequent to tonsillectomy. Let us, therefore, follow the anatomical line of cleavage between the tonsillar capsule and the deeper structures; thereby placing this operation on the highest surgical plane, instead of the indiscriminate bungling that is too frequently indulged in.

The models used here were kindly furnished by Dr. Harry C. Puckett of Warren, Illinois.

76 Stephenson Street.

BLOOD PRESSURE IN GENERAL PRACTICE.*

N. T. STEVENS, M. D.,
CLIFTON, ILL.

By blood pressure is meant the arterial tension or pressure of the blood in the vessels within which it is contained.

Blood pressure is divided into the maximum or systolic pressure and the minimum or diastolic. The systolic is the greatest pressure exerted and takes place during systole of the heart; the diastolic is the lowest pressure and occurs in the cardiac cycle, just at the beginning of the systole, the time when most of the blood has passed on through the capillaries into the veins and from these we obtain pulse pressure, which is the difference between diastolic and systolic pressures.

The importance of blood pressure has become prominent from a practical standpoint only in the last five or six years, and real value of actual blood pressure readings in their diagnostic, prognostic and therapeutic application to general medicine has begun to be appreciated and their value realized by the general practitioner.

When should the general practitioner measure blood pressure?

- (a) In the first examination of every patient.
- (b) Occasionally for watching the progress of cardiovascular disease and nephritis.

In a paper on diagnosis read before the Michigan State Medical Society, Dr. Richard C. Cabot says: "The next procedure following my personal routine is the examination of blood pressure." He considers the blood pressure machine the most important of all the resources that have been added to our armamentarium as physicians in the last fifteen years.

There are two methods of taking blood pressure:

1. The old or palpation method.
2. The new or auscultation method.

Of the first I will say nothing, as it is becoming obsolete and cannot be depended upon to give accurate information. The second, or auscultation method, is the one that is now universally recommended to be employed for both systolic and diastolic determination.

In the choice of an instrument for accuracy

*Read before Iroquois-Ford Medical Society, March 2, 1915.

and durability, the mercurial sphygmomanometer is preferred to the aneroid.

It is necessary to understand, where there are no pathological changes present, the following factors affecting the blood pressure readings:

It is important that the constricting cuff be on a level with the heart, otherwise the correct reading is raised or lowered by the effect of gravity on the column of blood. The position of the patient in relation to the horizontal is also important, systolic pressure being from 8 to 10 millimeters higher in the reclining than in the sitting posture. There is about the same difference between sitting and standing postures.

The main point is therefore to always take subsequent readings on the same patient in the same posture when possible, at the same time of day, and preferably between meals. There is a moderate rise in systolic pressure and pulse pressure after meals and the pulse rate is increased. During sleep the maximum pressure is lowered 10 to 20 millimeters, due to relaxation and vasodilation.

Exercise, excitement and altitude are all factors which cause a marked rise in blood pressure, even when there are no pathological conditions present; hence, in cardiac cases, where the heart is damaged or where arteriosclerotic changes exist, caution must be used in sending patients to a high altitude.

The time taken to secure blood pressure is an important matter, as too long compression of the artery will often cause an extra rise of 20 millimeters. The time taken to obtain accurate blood pressure readings should not exceed one or two minutes.

A simple and reliable method for obtaining the systolic and diastolic pressures is as follows:

The stethoscope is placed over the brachial artery, while the arm band of the instrument is being inflated. The point where the heart sound ceases, the mercury going up, gives the systolic pressure and the point where the pulsation ceases, the mercury going down, gives the diastolic pressure.

Blood pressure depends upon four main factors:

1. Cardiac strength.
2. Peripheral resistance.
3. Elasticity of the vessel walls.
4. The volume of blood.

As can be easily understood, the maximum or systolic pressure approximates the intraventricular pressure, while the minimum or diastolic pressure represents the peripheral resistance. The pulse pressure, or the difference between the two, represents the head pressure, driving the blood on out through the arterioles.

Various estimates have been given for the normal range of pulse pressure, but different authorities agree that the pulse pressure is 35 per cent of the systolic reading, where a normal balance is present and the diastolic pressure 35 per cent less than the systolic.

The pulse pressure is of the greatest value in determining the condition present, whether due to heart or arteries, and is most important in relation to treatment. If the systolic pressure approximates the diastolic pressure, making a small pulse pressure, it is a clear indication of failing circulation. This condition, if continued, would cause the systolic and the diastolic pressure to become the same, at which point there could be no blood pressure and therefore no circulation of the blood.

The main point to be remembered is that the pulse pressure means the reserve power of the heart after overcoming all the opposing forces in the circulation of the blood through the arterial system and for this reason I consider a clear conception of pulse pressure and its meaning as of the utmost importance in blood pressure readings.

It is necessary to remember the fact that continued high pressure cannot be maintained without cardiac hypertrophy and that the increase will of itself cause changes in the vessel wall.

Cases of hypertension are rapidly becoming more frequent, due in a large measure to the increase and strain of business life and the associated conditions of overindulgence in food, especially protein food, too rapid eating, the drinking of too little water, too little healthful exercise, the use of undue mental effort—in a word, the lack of good hygiene.

Hypertension is often in the beginning primary and purely a spastic condition, unaccompanied by organic changes. These cases are nearly all due to toxemia and can and should be relieved by proper elimination and avoidance of mental and physical overwork.

These cases would often be detected if a

routine taking of blood pressure were practiced and further damage prevented by proper prophylaxis. Even after organic changes in the arterial system have been caused there is still in most cases some spasm by the relief of which the development of more vascular changes are prevented.

I will now turn to some of the more common conditions in which hypertension is associated with pathological conditions and not a primary condition of itself.

Angiosclerosis. This term describes a rather common class of patients who have a permanently high blood pressure with no signs of sclerosis or nephritis. Their discovery is very important in order to prevent cardiac hypertrophy and vascular changes. Here it is important to regulate diet, eliminate overwork and worry, keep the intestinal tract open and the bowel function active, as many of these cases are partly due to autointoxication. Sweating is also of value in these cases.

Arteriosclerosis. This condition is the result if continued high pressure tension is accompanied by high blood pressure. Pure senile arteriosclerosis has no associated hypertension. Arteriosclerosis is often associated with diseases producing high tension as nephritis and cardiac conditions, and the hypertension present in such cases is often due to the associated disease and not to the arteriosclerosis.

There is a class of patients who have had a high arterial tension, but owing to a marked myocarditis and, in some cases, cardiac dilatation resulting from the high systolic pressure in the early stages, the blood pressure becomes normal in height or even a little lower than normal.

These cases are more serious than when the tension remains high. A serious mistake might occur by considering such cases as in good health because the systolic pressure is about the normal level or lower. This error can be guarded against by taking the diastolic pressure, for while the heart muscle cannot maintain the systolic pressure, the peripheral resistance in the vessels, due to sclerosed condition of their walls, remains and maintains a relatively high diastolic pressure, giving a small pulse pressure.

Autointoxication. Here is often found a markedly elevated blood pressure. Headache and dizziness, supposed to be due to high blood pressure, very often disappear with laxatives and

diet and no change in blood pressure. Most of these cases have increased indican in the urine.

In aortic regurgitation the systolic pressure is from 75 to 100 per cent higher than the diastolic, the pulse pressure being very high.

In cardiac arrhythmia there are many cases purely functional in character, but there are also a number with true organic disease. It is in these doubtful cases that blood pressure determinations are of great value. An irregular heart plus a high blood pressure is serious. The very same heart with low blood pressure may be of no significance.

Increased intracranial tension—apoplexy, depressed fracture of the skull, fracture of the base, Jacksonian epilepsy, intracranial hemorrhage—in these conditions the highest blood pressure readings occur. It should be remembered, however, that the high blood pressure is compensatory and is the effort to supply more blood against the increased intracerebral tension, and thus prevent anemia of the brain. The important point is not to bleed and try to lower the blood pressure, but to operate where possible, and where not to give atropine to paralyze the vagus and to allow the pressure to rise more rapidly.*

In head injuries the blood pressure reading is of great value, for in concussion the pressure is low, whereas in the above-named conditions it is invariably high, unless every late, when cerebral paralysis has developed.

Chronic interstitial nephritis gives a high blood pressure. Janeway says: Given a systolic pressure of over 200 millimeters, the diagnosis of contracted kidney must be disproved by repeated examinations before it is abandoned. In chronic parenchymatous nephritis the blood pressure is uncertain, often being normal. In uraemia the blood pressure often runs as high as 200 or 300 mm.

There are many cases of myocarditis not discoverable by physical examination. It is in these cases that blood pressure helps, not only to make the diagnosis but also to determine the extent of the disease.

Graupner gives a functional test for detecting myocarditis. Take the pulse rate and the blood pressure of the patient to be tested and then give a prescribed amount of exercise, as walking up a certain number of steps. Then take the pulse rate and the blood pressure every

*Nickolson.

five minutes. A normal heart will, during exercise, cause a rise of blood pressure associated with an accelerated pulse rate. The blood pressure and the pulse rate will remain elevated during the exercise, unless it is excessive or unduly prolonged. With a cessation of the exercise both blood pressure and pulse will in a short time return to their previous level, the pulse rate a little before the blood pressure.

In myocarditis, if mild, there will be an elevation of blood pressure and an acceleration of the pulse rate, but the blood pressure in a short time will fall below or to its previous level, while the pulse rate remains higher longer. In severe cases the blood pressure will fall from the start the pulse rate increasing, the blood pressure rising to its previous level only after a long time.

In pneumonia, where the cases are not alcoholic, if the systolic pressure expressed in millimeters of Hg is higher than the pulse rate expressed in beats per minute, the condition of the patient is good; when lower, the condition is serious.

In typhoid fever routine blood pressure observations are of great value. Normally we have in this one of the lowest pressures occurring in diseases. In hemorrhage there is a sharp sudden fall, due to a lessened volume of blood. In perforation just the opposite takes place. The irritation of the peritoneum causes a sudden sharp rise in blood pressure. This sudden rise will show the complication sometimes hours before any other definite signs of perforation. A lack of rise in blood pressure does not negate other signs as the vasomotor centre may be exhausted, but when high pressure is present it is reliable, unless pneumonia develops.

Hypotension is a symptom and not a disease and its treatment is that directed to the cause. It should be borne in mind that in a large number of cases, hypertension is a necessary compensatory process in order to maintain a correct cardiovascular equilibrium. This is especially true in advanced cases. Prophylaxis is most important and will become more frequently used as a routine taking of blood pressure becomes more prevalent.

Patients should be warned against chronic over-indulgence in food, more especially food having a large nuclein content, which forms excessive purin compounds, e. g., meats, liver,

sweet breads, cured meats, sausage, cheese, veal, etc. Advise proper mastication, slow eating and the avoidances of excessive muscular exercise.

In senile hearts with hyper-tension it is of great value to give digitalis combined with a nitrate or iodide, as in these cases the high tension is the result of a venous stasis and a better action of the heart relieves the symptoms and lowers the tension.

NEW SANITARY ENGINEERING BUREAU OF THE STATE BOARD OF HEALTH.

(Continued from page 141)

eliminated through early attention to drainage conditions.

Close attention will be given to summer resorts, chautauqua grounds, fair grounds and construction camps, all of which are known to be responsible for the spread of communicable and preventable diseases when not properly supervised. The new bureau will also constitute a valuable means for collecting and rendering available information regarding city wastes collection and disposal, street cleaning, air conditioning, plumbing and various other sanitary matters of an engineering or a technical character.

Mr. Paul Hansen, engineer of the Illinois State Water Survey, has been engaged to assist Dr. C. St. Clair Drake in organizing the new department.

H-M-C IN CONFINEMENT

Speaking of "twilight sleep," *Ellingwood's Therapeutist* points out that the patient passes through a very short labor, with so little pain that she subsequently forgets it and declares that it is the only method for the expectant mother, labor progressing with so little muscular irritation that in many cases there is almost no pain, and where pain occurs, it is so transient that the patient has no complaint to make.

Referring to these statements, Dr. B. L. Robinson, in a communication to the same journal, declares that "all that can be desired in this direction can be accomplished by Abbott's H-M-C tablets. I have used them," continues this correspondent, "ever since they were put on the market. All cases do not need them; in none should they be used indiscriminately, but in properly selected cases and at the proper stage of labor they are all that can be desired. I can't describe the satisfaction, both to myself and to the mothers and families."

ILLINOIS MEDICAL JOURNAL

Published monthly by The Illinois State Medical Society, under the direction of the Publication Committee of the Council.

GENERAL OFFICERS 1914-15

PRESIDENT.....CHARLES W. LILLIE, East St. Louis
 PRESIDENT-ELECT.....WILLIAM L. NOBLE, Chicago
 FIRST VICE-PRESIDENT.....F. S. O'HARA, Springfield
 SECOND VICE-PRESIDENT.....H. P. BEIRNE, Quincy
 TREASURER.....A. J. MARKLEY, Belvidere
 SECRETARY.....W. H. GILMORE, Mt. Vernon
 (Ex-officio Clerk of the Council)

THE COUNCIL

District 1—EMIL WINDMUELLER, Woodstock.
 District 2—EDWIN S. GILLESPIE, Wenona.
 District 3—CLYDE D. PENCE, Chicago.
 District 4—AUGUST H. ARP, Moline.
 District 5—C. S. NELSON, Springfield.
 District 6—C. D. CENTER, Quincy.
 District 7—C. F. BURKHARDT, Effingham.
 District 8—E. B. COOLEY, Danville.
 District 9—FRANK C. SIBLEY, Carmi.

CLYDE D. PENCE, *Chairman*, 3338 Ogden Avenue.

Send original articles and all communications relating to advertisements and mailing list to Dr. Clyde D. Pence, Editor, 3338 Ogden Avenue.

Membership correspondence to Dr. W. H. Gilmore, Mt. Vernon, Ill.

Society proceedings and news items to Dr. Henry G. Ohls, *Managing Editor*, 927 Lawrence Avenue, Chicago.

Contributors will submit all copy for publication typewritten on standard size paper and double spaced. Copy not complying with this rule will be returned, if convenient.

AUGUST, 1915

Editorials

ANTITYPHOID VACCINATION.

At this season of the year frequent reports of typhoid fever are heard. Occasionally an epidemic is reported from certain localities, and in nearly all communities a few cases occur. A little carelessness in handling a case of typhoid frequently is the cause of spreading the infection to other members of the family or of the community. Fortunately there is a preventive which is not difficult to obtain, is harmless and is approximately positive.

Antityphoid vaccination is not in the experimental stage, having passed that degree with its use in the United States Army. No person of intelligence can read the various reports of its use, especially the reports of the United States Army, and not be convinced of the prophylactic value of this vaccination.

The reports of army medical officers concerning its use in the army when the troops have been mobilized in typhoid infested districts are marvelous. Scarcely a case has developed in our troops mobilized in Texas and Vera Cruz dur-

ing the last two years, where vaccination has been employed. A very few cases were reported by the army officers after vaccination, but the failure to protect was supposedly due to inefficient vaccine. Of these soldiers having typhoid but two died (1912), indicating that the vaccine at least modified the course of the disease.

How different were the reports from our armies during the Spanish-American disturbance, when over twenty thousand cases of typhoid were reported.

The state now furnishes free antityphoid vaccine, and physicians may secure it at any of the distributing stations or by application to the State Board of Health.

In Chicago each summer are reported cases of typhoid following vacations spent at various summer resorts or country outings, due no doubt usually to polluted water. We think all physicians should urge this vaccination to all his patients contemplating a vacation trip. All persons having an exposure to typhoid infection should be vaccinated at once.

We frequently find people unwilling to have vaccination because of fear of the reaction. There need not be any fear, because the reaction is mild, except in a very few cases, usually only a local mild inflammatory area with slight fever for a few hours. No serious trouble has been encountered, and no mortalities.

The period of immunity has not been determined accurately, and of course varies in individuals. Four years is supposed to be near the average period of immunity afforded by vaccination.

THE EASTLAND DISASTER.

Another crushing, criminal accident has befallen the pleasure-going folk of Chicago. Approximately one thousand people have lost their lives by the foundering of the Eastland. We call it an accident, but it is extremely doubtful if as mild an expression is within the bounds of truth.

If newspaper reports are true, the boat was originally licensed to carry less than two hundred passengers. Later, because the boat was not paying, the license was altered so that she might carry several hundred more, provided the boat did not go beyond a five-mile shore limit, or in water sufficiently deep to submerge the

vessel. Still later she was licensed to carry 2,500 passengers, and other restrictions removed.

It seems also from these same newspaper reports that the vessel had numerous previous accidents, and that the government inspectors had been advised that she was not a safe seaworthy craft, and by persons whose opinion was worth listening to. Also these reports have it that a citizen reported to the United States Inspector the violation of rights by another one of our over-crowded boats, and was informed he might be fined several hundred dollars if the complaint was pushed. We do not know if all these reports are strictly true, but there are so many of them apparently authentic that it is difficult not to believe them.

It is common talk that many of our excursion boats—short trip boats—are generally much overloaded, and this all permitted by government inspectors.

There is little doubt that the inspectors knew this boat was unsafe. There is little doubt the officers of the company knew it was not only unsafe but was absolutely dangerous. Yet for the sake of a few dollars would sacrifice human life by the hundred:

It is to be sincerely hoped that the responsibility will be placed where it belongs, and that the persons who are responsible for these deaths will be given a long opportunity of solitude in which to consider the heinousness of their crime.

OPTOMETRY BILL BECOMES A LAW.

After years of persistent fighting, the optometry bill was passed by the legislature and signed by the governor. This undoubtedly was the most unfortunate act of the last legislature, so far as the medical profession was concerned. It is to be regretted that the governor, who, generally speaking, has been fair to the medical fraternity, did not veto the measure.

After all is said, however, the profession did not deserve better than they received. It is a strange fact, that when a vicious measure is before the legislature, when we physicians know it is before it and that large sums of money are being expended to pass such measures, that it is impossible for the public relation committee or the legislative committee to receive support from the profession.

The ophthalmologists, who of the profession

are the most affected, showed a remarkable indifference. Aside from the work of the legislative committees, almost no opposition was shown by the profession this session, to this obnoxious measure. The passage of the bill has opened the bars to another class of practitioners.

During the few days elapsing between the time of the passage of the bill and the time the governor's signature was attached, petitions were circulated, skillfully worded, appealing to the governor not to veto the bill, and these petitions were presented to the doctors, and *were unwittingly signed by doctors.*

What is of far more importance than the annoyance to the profession, will be the practicing of medicine, and particularly of ophthalmology by a set of practitioners totally unfitted or untrained for the work, and the people will pay the price, even to the dimness of their vision.

One of the remarkable things in connection with the passage of this law, was the persistence with which its supporters worked. They have been before several successive legislatures, and expended money without stint. We are informed (we do not know how truthful) that \$120,000 was spent on the last legislature in obtaining the passage of this bill. Its supporters, we are told, were in the field constantly during the entire session. It is fair to presume that any measure which requires such expenditure of money for its passage, is at least in some measure a vicious bill, and should be defeated.

When the medical profession learns that some assistance must be given its legislative committees, if such legislation is to be defeated, then will we have better regulation of the practice of medicine.

DOCTOR CALDWELL HONORED.

On July 15 the Medical Fraternity tendered Dr. Charles P. Caldwell, former president of the Chicago Medical Society, a dinner in token of their esteem and admiration for him. About 250 covers were laid, but unfortunately these were not a sufficient number to accommodate all who were there.

Dr. W. O. Krohn, acting as toastmaster, by his anecdotes or ready wit, put all the speakers on their mettle, and it was an evening of pleasure for everyone who attended.

What little that was not known of Dr. Caldwell before, was widely known after the dinner. Among the speakers who told of Dr. Caldwell's sterling worth as well as of many anecdotes at the doctor's expense were, Drs. W. L. Noble, C. J. Whalen, A. E. Sterne, Judge McGoorty, Drs. Clara Seipple, A. C. Cotton, H. D. Singer, W. T. Mefford, A. A. O'Neil and J. A. Dawson.

Special music written for the occasion was interspersed throughout the evening.

The visiting doctors who were attending the convention of neurologists and alienists were invited, and Dr. Stern with his funny stories helped much to entertain the company.

In spite of all the mirth and merry making and fun of the funny stories, there was easily discerned an undercurrent of sincerity, which told plainly that all were glad to be there, because of their high regard for the honored guest. This regard was further expressed by presenting to Dr. Caldwell a loving cup—Dr. I. C. Gary making the presentation speech.

With others who added pleasure by their presence to this festal board were Dr. Caldwell's wife and children and his gray-haired mother.

The occasion will be long remembered by the fraternity of Chicago, all of whom wish Dr. Caldwell all happiness for many years.

ACTIONS FOR CIVIL MALPRACTICE. ELEVENTH ARTICLE.

ROBERT J. FOLONIE, LL. B.,
CHICAGO.

The layman has acquired a considerable knowledge in late years of antiseptic precautions to be used in performing operations and a misapplication of this knowledge may frequently cause claims of malpractice.

The case of Dr. C. Patient had a dirty lacerated wound of the fore-finger, caused by its crushing between two dirty pieces of iron. The distal phalanx was amputated and a subsequent progress of the infection caused a practical loss of the arm before it could be arrested. The preparation for the amputation was made in an adjoining room where the instruments were boiled on the stove, but this being done out of the presence of the patient, he assumed it was not done at all.

Suit was brought and the case tried on the

assumption that the instruments were not sterilized, and that this was necessarily the cause of the septic condition of the arm. The fact that the injury was originally an infective one was passed over as of no importance. Claim was made, among other things, that the finger should have been amputated—"higher up beyond the point of infection." Had the amputation been greater, claim would doubtless have been made that the operation was unnecessarily extensive and therefore negligent. In such a situation it is impossible for the physician to treat the patient so as to be certain that a claim of malpractice will not be made.

It is useless to attempt to avert a malpractice claim or suit when logic is abandoned and the relation of cause and effect is assumed, instead of being established.

Instead of an approach to such claims with an open mind, with a view to ascertaining whether fault in fact exists and what relation, if any, it bears to the complained of results—it seems to be the misfortune of physicians that such claims are assumed to have a basis and all the ill-results of the disease are attributed to the treatment.

That such an attitude should so peculiarly exist in this class of cases I am at a loss to understand, unless it is that the egotism of every man is such that he regards his own body as inherently sound and impregnable to disease as his own constitution is so strong and withstands and overcomes disease so readily that if ill results follow, they must be due to interposition of some outside agency. This attitude has this much real basis: That the natural condition of the human body is that of health, and that a state of disease is attributable to some violation of natural laws. It is not so commonly recognized, however, that this violation of nature's laws may be by the patient himself or even by his ancestors and it is to be doubted whether the psychology which impells these cases can be entirely eradicated by any degree of education, but there is no doubt that the evil may be lessened by the very causes which now produce many such suits, namely, an education of the public.

The present superficial education is productive of ill, but, if carried further, it must necessarily be productive of good.

A MEDICAL COURSE IN TUBERCULOSIS.

During the month of September, a complete course in tuberculosis will be given at Rush Medical College by Dr. John Ritter and associates. This course begins on Monday, September 6, at 9 a. m., covering a period of 21 days, or until the 29th, inclusive (daily from 9 to 4, excepting Sundays. The course consists of daily lecture, clinic and conference from 9 to 12, the afternoon of the first week laboratory instructions, such as chemical and microscopical examination of sputum, blood pleural exudate, etc. Post mortem examinations and the study of pathological specimens the second week, to be followed by a study of tuberculosis in its various forms at the bed side at the different sanatoriums, hospitals and dispensaries in and about the city. The course is open to practitioners, advanced medical students, nurses and all who wish to bring their knowledge of this very important topic up-to-date. For particulars write Mr. James A. Harper, Registrar, Rush Medical College, 1748 W. Harrison St., Chicago. Telephone West 113.

ANOTHER BAD BREAK.

The elaborate post mortem findings published in the July JOURNAL in Dr. Whalen's article on "Carcinoma of the Omentum" should have been credited to Dr. Edward C. Rosenow. Our attention has been called to the omission of a footnote crediting Dr. Rosenow with the work.

TUBERCULOSIS NOTES.

Life Savers in Tuberculosis:

Honest Physician.
Sanatorium Care.
Fresh Air.
Sunshine.
Good Food.
Rest.
Pluck and Persistency.

The Crusader.

It is stated that about 25 per cent. of cases of tubercular cervical adenitis develop pulmonary tuberculosis when not operated upon. Of those operated upon only about 3 per cent. develop pulmonary tuberculosis.

For surgical tuberculosis the Roller treatment gives great promise of success.

Climate does not cure tuberculosis. It is the fresh

air associated with climate that is absolutely necessary for cure.

1913 had a tuberculosis death roll of 143,000 in the United States.

Isolation of tuberculosis patients should be insisted upon in hospitals, asylums and public institutions.

Dr. Theo. B. Sachs of Chicago has been elected president of the National Association for the study and Prevention of Tuberculosis.

Forty to 90 per cent. of all deaths from tuberculosis in the western and southwestern states are of natives of other states, who migrated there for their health.

THE ALIENISTS AND NEUROLOGISTS.

The interest shown in the recent meeting of Alienists and Neurologists of the United States, held in Chicago, July 12th to 17th, under the auspices of the Chicago Medical Society, demonstrates the growing necessity for such a conference.

The attendance was not as large as that of last year, due to the fact that it was not advertised, but the interest and sincerity of purpose was more marked.

Aside from the scientific program, resolutions for the information and education of the public, of the causative forces which produce insanity, mental defectives, criminals and other socially incompetent were passed. As it is necessary for the co-operation of the public, the public being made acquainted with conditions will cheerfully lend its assistance and help to further these ends, and will by social science remove, at least to a limited extent, these offending factors.

The clinics held this year added much to the interest and value of the meeting.

The October issue of the JOURNAL will be given to the papers read at this convention, and we hope prove of interest and value to our readers.

It is the purpose at present of the Chicago Medical Society to hold the meeting another year. Those interested in social welfare should arrange to attend the next session.

Any kind of filth in which you find maggots is fly-breeding filth—maggots turn into flies.

What does it profit a man to have a good time for two weeks and then come home and go to bed with an attack of typhoid fever? Verily, not much.

Public Health

OSTEOPATHS AUTHORIZED BY U. S. TO PRESCRIBE MEDICINES IN ILLINOIS.

On or about August 2, the collectors of internal revenue throughout the country received the following notice of a decision of the Treasury Department over the signature of David A. Gates, the Acting Commissioner in Washington:

That portion of the paragraph, headed "Registration, who eligible for," of Treasury Decision No. 2172, which reads: "An osteopath, therefore, or other person heretofore administering these drugs, if not classed as a physician in the state in which he resides, would not be permitted to register under this law," is hereby revoked.

Osteopaths, therefore, should be permitted to register and pay special tax under the provisions of the Act of December 17, 1914, provided they are registered as physicians or practitioners under the laws of the state and the affidavit is made in application for registration on Form 678, as required by Treasury Decision No. 2215, of June 10, 1915.

On receipt of this information, Dr. Drake, secretary of the State Board of Health, wired the following to the Acting Commissioner, seeking to avoid an unfortunate situation in this state:

Medical practice act of Illinois licenses osteopaths as other practitioners and specifically prohibits them from using drugs internally or externally or performing surgical operations. To avoid complications in this state would suggest that collectors be advised osteopaths not eligible to register in Illinois, under treasury decision twenty-two thirty-two. Only physicians and doctors authorized to practice medicine and surgery in all their branches should be registered under treasury decision twenty-two thirty-two. Be kind enough to advise me of action taken.

This morning (Tuesday) the following came in answer to above telegram:

Answering your wire this date, treasury decision twenty-two thirty-two promulgated only after thorough consideration of narcotic law by law officers of department and no other construction deemed warranted by language of statute, therefore the instructions to collectors suggested by you cannot be issued.

Evidently, the federal authorities intend to issue certificates to osteopaths, which this class of practitioners will construe as entitling them to prescribe or administer narcotics, regardless of the state statute, which specifically prohibits

osteopaths, or "other practitioners" as we style them, from prescribing or administering drugs internally or externally.

Publication of this decision without qualification will, of course, lead to wholesale registration by osteopaths and to wholesale violation of the Illinois medical practice act.

It will also lead to wholesale prosecutions by the state authorities for such violations.

A considerable number of "other practitioners" and even some midwives have taken out registration papers. The plan is to "get the goods on" those who have registered, who have no legal right to prescribe or administer drugs or medicines, and to vigorously prosecute them.

The registration lists in the offices of the Internal Revenue Collectors afford good leads to violators of the medical practice act. In this respect, at least, they serve a good purpose.

The above information came to hand while the JOURNAL was on the presses. Editorial comment reserved.

NEW SANITARY ENGINEERING BUREAU OF THE STATE BOARD OF HEALTH.

Illinois, although the third state in the Union in point of population, has been the twenty-second state to establish an engineering department of the State Board of Health. However, such a department has now been organized on a substantial basis and great good to the public health of the state may be looked for through its activities.

Hitherto, municipalities and private corporations have without hindrance built unsanitary sewerage systems and furnished polluted public water supplies. Such offenses not only affect local public health, but constitute foci of infection throughout wide areas in this day and age of rapid transit. The State Board of Health is the only state department that can adequately deal with these matters and it is proposed through the new sanitary engineering bureau to scrutinize all projects for waterworks and sewerage, with special reference to their relation to the public health. Not only will the public health be benefited, but in many instances large sums of money will be saved by preventing unwise selections of sources of water supply and many evils of real estate speculation will be

(Continued on page 136)

Illinois State Medical Society

SECRETARIES' CONFERENCE.

Tuesday, May 18, 1915.

10:00 O'clock A. M.

Meeting called to order by the President, Dr. H. F. Bennett.

The President: In the absence of Dr. Carter, Dr. Henkel will act as secretary.

I will ask Dr. Henkel and Dr. Blackburn to constitute the nominating committee. They will present the names for president, vice-president and secretary at the conclusion of the program.

Our President is the first speaker, and will deliver an address: Dr. Brittin.

Dr. Brittin's address appears on page 81.

The President: Dr. Fiegenbaum has found it impossible to attend so we will have to pass to the next number.

For the first time in twenty-eight years Dr. Weis has been forced to miss a state meeting. We regret very much this honorable record must be broken now. However, the Doctor has forwarded his paper and it will be read by Dr. Ball. (Dr Weis' paper appears on page 107.)

The President: The next will be the County Society and the A. M. A., by Dr. Craig, of Chicago. (No response.)

The President: We will hear from Dr. T. D. Cantrell, of Bloomington, on "A Recording System for County Secretaries."

Dr. Cantrell: *Mr. President, Ladies and Gentlemen:* This matter was brought home to me very forcibly when I took the books of the McLean County Medical Society some four years ago, which were being kept in the old method, each member occupying a page on the old style ledger. Some of them I found indexed, others were not. It required a long time to find out the number of active, paid-up members we had in the society and ascertain the number of delinquents. And the matter came home to me that a simplified method of bookkeeping for the county secretary could be very easily arranged, inasmuch as our entire income is once a year from dues. And so I tabulated our members into the form I have here (indicating) and I used a loose-leaf system.

When you lift the lid of the loose-leaf system the first thing that you come to is the "Receipts and Disbursements," and when a member pays immediately he is placed on the book as "Receipts," with the date of payment and the amount of dues, and at a convenient time they are posted on the tabulated ledger leaf, which is indexed in the loose-leaf ledger. It makes it convenient. On the tabulated form there is no date. If you want to look up the date the man paid his dues you will find it on the "Receipts and Disbursements."

There is nothing except figures to be written. The man's name in our books is typewritten, and the address, and 1915, and each year up to 1920 on the

one leaf. That leaf will answer the purpose for six years. There is no rewriting of the name for a period of six years.

And then the members are numbered, you will notice, down in the margin, and that numbering will give you at a glance the number of A, B or C that you handle. Glance at the column of the year in which you are doing business and you will see in a minute the number that have not paid. If you have ten men on a certain page and two of them have not paid, in making your report to the state secretary it is a positive fact that you will get the matter right when you give the number of live and the number of suspended members, where if you are running through the old style system you will make many, many mistakes in that matter, and it causes an untold amount of correspondence with the secretary to get the matter corrected. I worked for a year to try to get the matter correct with Dr. Weis when I first went in, as to the live members for whom we had remitted, and then I did not get the matter straight until we had a new state secretary elected and he finally got his books adjusted until we agreed. We were three years getting the matter straightened out from the old style system. With this system I see no chance for anyone with ordinary skill to make any mistake as to the number of members that they have remitted for.

Then just back of the ledger leaves I have the blank leaves, just the blank page. The minutes are taken with a pencil at the time of the meeting and then the page is simply slipped out of the loose-leaf ledger, dropped into the typewriter and the minutes are typewritten, using care to put on the right upper corner the date, and if there is anything of especial interest involved, as a resolution amending the by-laws, or anything of that kind, it can be indexed in the first of the book as to the date, and it is very easy to find them. I place the new minutes on top of the old minutes; the old ones are deeper down all the time, and the fresh minutes are on top right in front of me when I open the ledger. Then when the ledger is full the leaves can be taken out and sent to a book binder and be bound in nice form and you have a permanent record, and you simply fill in your loose-leaf ledger with more blank pages and go on.

In balancing the books the amount of the receipts must balance with the amount of dues that are paid. It is only a minute's job to balance your books and see whether you have given every member due credit. If your receipts exactly balance with the credit that you have given your members, you know that your books are correct and that you have given each member due credit for all the dues he has paid.

This is simply a little matter I was asked to present here because some of my friends thought it might be of help to the secretaries of the different societies.

The President: "The County Medical Society Problems," Dr. Humiston.

Dr. Humiston presented his paper.

The President: "Problems of the Small Society," by W. C. Blaine. Is Dr. Blaine here? If not that concludes our program. These papers are now open for discussion. If there is no discussion we will proceed to the election of officers for the ensuing year.

The nominating committee have presented for president the name of Elizabeth Ball, of Quincy; vice-president, Dr. H. B. Henkel, of Springfield; secretary, Dr. F. Bondurant, of Cairo. What will you do with the report?

Moved and seconded that the report be adopted and that the secretary be instructed to cast a unanimous ballot for the preceding names. Motion prevailed.

The President: I declare them elected for the ensuing year.

If there is no further business, motion to adjourn is in order.

Voice: I move we now adjourn.

Whereupon the Secretaries' Conference adjourned.

MEETING OF SECTION ON PUBLIC HEALTH AND HYGIENE.

Wednesday, May 19, 1915.

9 O'clock A. M.

Meeting called to order by the Chairman, Dr. R. R. Ferguson.

The Chairman: The Section on Public Health and Hygiene will please come to order.

It has been the history of this Section during the past three years of its existence that at the beginning of the meeting all of those who are on for papers are usually present, and maybe one or two others, but as a usual thing before the meeting is over the crowd begins to come in, and the fact that these very important papers that we have today will all be printed in the JOURNAL makes it absolutely positive that these good papers will not be lost in any sense of the word.

I remember a year or two ago, when I happened to be on for a paper here, that Dr. Van Derslice was the Chairman of the Section, and he made me the "goat," in other words, he put my paper on first, and I am going to turn the tables on him and call on Dr. Van Derslice, of the Chicago Medical Society Milk Commission. He will talk to us on the making of a medical milk commission, and I assure you that Dr. Van Derslice knows the certified milk game from one end to the other, and what he does not know Dr. Campbell does. Dr. Van Derslice.

Dr. Van Derslice presented his paper. (See page 86.)

The Chairman: For the benefit of those who have come in later, I wish to state that I have seen fit to arrange these papers in order that we may have a discussion of two or more papers at the same time, and in that way I think we can conserve our time and perhaps finish our entire section before we adjourn at noon, so before the discussion of Dr. Van Derslice's paper I am going to ask Dr. Grace H. Campbell to give her paper on "Medical Inspection of Employees on Certified Farms," and to show you that this is something that is being done very thor-

oughly with the Commission of the Chicago Medical Society is one of my reasons for asking Dr. Campbell for this paper. Dr. Campbell's paper appears on page 90.)

The Chairman: I am sure, Ladies and Gentlemen, that these two papers on certified milk, in themselves, and the work that they represent, particularly the last one showing the extent to which we follow out the rules and regulations which have been laid down by the Chicago Medical Society, or the American Association of Medical Milk Commissions, will justify you in coming here this morning, besides the other good papers that we have on the program.

Professor Hanson, of the University of Illinois: May I ask who pays for the Boards, the Commission or the Bureau?

The Chairman: Are there any other questions? Perhaps in the answer of that question some other thought may be brought out. Dr. Van Derslice will you please answer the question for Professor Hanson?

Dr. Van Derslice: The purchaser pays the freight. The money is raised by the Chicago Medical Society Milk Commission by dividing our expenses among the farmers. We have certain definite charges that can be charged directly to the farmer. For instance, the bacterial examinations, the sanitary inspections, the veterinary inspections and the tuberculine inspection are all charged to the individual farmer. Then there is the blanket expense. We have a clerk. Our office expenses are about \$100 to \$125 a month, and our expert expenses, general expenses, are put into that blanket expense. The blanket expenses are divided, where it is possible, with regard to the amount produced on the farm. Other expenses are simply divided equally among the different farmers. That was one defect in our financial system. We started out to divide the expenses and not pro rata, according to the production or to the number of cows. The Milk Commission, I believe, should either certify on a per quart basis, and if there is a profit all right, let that go to the Commission, or divide the expenses on a quart basis. But we have never done that. We divide on a farm basis, so that in reality the producer of a lower number of quarts pays a much higher price for certification than the big farmers, and personally I think that the small farmer or producer is the one to encourage; I think we get better milk from them than from the big ones.

Professor Hanson: The reason I raised the question of the cost, the other day I happened to talk with M. N. Baker, member of the Board of Health of Mt. Clair, N. J., who called my attention to certain abuses in the manufacture and production of certified milk, which seemed to grow out of the fact that the expenses for all inspection, etc., of the expert work are paid for by the dairymen. He said that in their state, on a dairy serving a good many people in Mt. Clair, are maintained systematically tuberculosis cows, and the Certified Milk Commission condemned 180.

Dr. Van Derslice: I might say this, in order to

straighten that matter up, that the producer pays the bills to the Commission; that nobody that does any work for the certified farms is paid by the farmer at all; every penny goes through the Milk Commission, and in that way of course we can charge them amply to pay for all of the bills and yet not have it cost the Milk Commission a single cent. The Milk Commission is not a money making organization in any sense of the word, and we never have but very little money ahead at any time. Are there any further questions?

Dr. Snell: Mr. Chairman, this term "certified milk" is one of the most misunderstood terms in the world. I think probably it is wise not to make any attempt to change it, or any thing of that kind, but in talks before various organizations in the farmers' interests, and women's clubs, for the last two years I have often asked for a written definition of certified milk. I have probably done that a hundred times. In about fifty per cent. of the times certified milk has meant sterilized milk. Certified milk has meant in other cases pasteurized milk, and about once out of a hundred times has the correct answer been given—pure milk.

I do not want to advocate changing the term of certified milk, or anything of that kind, but I recall an incident that happened in our little town about three years ago. A little individual dairyman had about four or five cows, a wagon and a white suit and hat, and started to deliver certified milk, and he got away with it very nicely. He was charging twelve cents a quart for it, when the actual price for it down there was about nine cents. Yet he got by with it because he was the local dairyman. He would go to the depot where the farmers took their milk to be shipped to St. Louis and Chicago, buy the skimmed milk and dilute his own with it and sold it as certified milk. Well there was such a howl raised that he quit business.

Here is what I have been trying to get at: The term "certified milk" is often misunderstood to mean one thing when it really means another.

Dr. Brown (De Kalb County): Many years ago some doctor in Chicago was writing a certificate for a certain kind of mineral water. He wrote, "I recommend this water, not for what it contains, but for what it does not contain." I think that is certified milk. (Laughter.)

The Chairman: That is a very excellent definition.

Dr. Brown: I think that is a very good definition. The campaign for clean milk or certified milk is certainly a campaign of education, not only among physicians, but the laity as well. Both sides must be educated before certified milk is used.

The Chairman: If there is no further discussion on these papers, we will pass on to the next.

The next paper, being the third paper of our series, is "Recent Practice Relating to City Wastes' Collection and Disposal," by Mr. Paul Hansen, Engineer of the State Water Supply, University of Illinois. Professor Paul Hansen. (Paper appears on page 101.)

The Chairman: In Mr. Hansen's talk he mentioned the co-operation that would be possible with adjacent municipalities and, therefore, before the discussion of his paper is taken up I am going to ask for the next paper. It is "Co-operation in Public Health Work by Adjacent Municipalities," by the Commissioner of Health of La Salle, Peru and Oglesby, Ill. Before I had written to him about his paper, I remembered the name as having been associated with my school days, not knowing who the gentleman was until he appeared this morning, and I find he is a classmate of mine. I am glad to introduce Mr. G. H. Ruediger.

Dr. Ruediger: Mr. Chairman and Ladies and Gentlemen: This is an experiment that is being tried out in two places in the United States. (Paper appears on page 96.)

Chairman: I am sure that these two papers that we have just heard were certainly very acceptable to this Section. The paper of Mr. Hansen shows an immense amount of work. The paper that Dr. Ruediger has just read shows something that is practically new in this country, there being only two of these local municipalities which are co-operating. It seems to me that it is a field for very widespread application throughout the country, and I am sure there should be some health officers here from some of the smaller towns and communities that should be able to discuss the work that has been brought out here and at least bring out some new points which he has not touched upon. These two papers of Professor Hansen and Dr. Ruediger are open for discussion.

Dr. Ensign: As a resident of La Salle county, I feel deeply interested in this work. We are very fortunate in having so charitable and public spirited a citizen in our county as Mr. Mathiessen, and I presume it would be a long time before anything of this kind was undertaken had we not had such a public spirited citizen to furnish the means for its initiation. We are very much interested in it and we are very proud of what has been accomplished already by the writer of the paper and his assistants in each city. Fortunately, these cities are right close together; at least, Peru and La Salle are so close together that a stranger could not designate the line between; Oglesby is some few miles away and across the Illinois River, but it will be remembered that our county is second largest in the state in territory, McLean having a few acres more, and third in population. For a long time it stood second in population to Cook County, but Peoria County in 1890 gained by the growth of the city of Peoria, and we are third now, so we have a number of quite large cities—four, I think, whose population will be found between ten and fifteen thousand. Two of these are Peru and La Salle; Oglesby is somewhat smaller. If the good that has been undertaken and is being carried out faithfully by these gentlemen who have charge of it can be made a success in those towns and those cities, largely made up by a class of people of a character hard to control, I believe it could be made a success in almost any other combination of municipi-

palities, even although they may be further apart. The combination of Streator, Ottawa and Marseilles could be carried out in a similar way.

Dr. Park (Health Commissioner of Rockford): Regarding the city waste, I presume we have the same thing in our city that the rest of you have; that is, the public dump, which gives the department a great deal of annoyance, and I think the one solution to that is to have each dump supervised and as the low places are filled up have them leveled off. The garbage, too, that is collected eight months out of the year, should be collected twelve months. There is no question but what the smaller towns in the country districts are the places that need the attention at the present time. The smaller villages, about 500 population, are controlled by one supervisor, that is, health officer, who looks after those things. If the complaint seems to him to be bad enough, he reports it to the Board of Health. It seems that the quickest remedy for that will be the Township Health Officers under the jurisdiction of the State Board of Health.

I wish to mention the automobile that Dr. Ruediger mentioned. I do not think that that is practical. I have put in appropriations several times for automobiles and they have been turned down. I bought a motorcycle and that was satisfactory to everybody concerned. The maintenance is very small, a man can get around on it much quicker than he can with an automobile, and can just be on the job all the time. We have one man with a motorcycle and he is the equivalent of about three inspectors who have no way of getting around except walking or going on the street cars.

The Chairman: I am very glad to hear from Dr. Park. Is there any other Health Commissioner from the smaller cities?

A Voice: Godfrey of Bloomington is here.

The Chairman: Mr. Godfrey, will you please arise?

Dr. Godfrey: Mr. Chairman, I want to say that I have very little to say, for the reason that I have only been an officer about two weeks. I don't know anything about it as yet. I came here to learn, and I have never been able to talk about things I did not know anything about, but we have a man here from our town that can always talk and say something interesting.—Dr. Vanderbush.

The Chairman: I will call upon the gentleman if he will arise and say something.

Dr. Vanderbush: Dr. Godfrey is very bashful. I would just say that Bloomington is going through a transformation just at the present time. A number of years ago they adopted a plan of having a medical commissioner and they paid him the enormous salary of fifty dollars a month. That was continued until the present time. Bloomington has recently gone under the commission form of government and we have four commissioners and the mayor, and one of these commissioners is now the head of the Health Department as commissioner and president

of the Board of Health. The system of a commissioner in the form in which we had had it did not prove satisfactory, consequently a new plan has been adopted, which has already been condemned by some of our brethren before it has been tried, but which we propose to try out. A board of three physicians has been appointed as advisors to the Board of Health, under a sufficient compensation to pay them for time which may be taken in their advice to this Board of Health.

Dr. Park: I would like to ask Dr. Ruediger in reference to the Enabling Act of the Legislature at the present time.

Dr. Ruediger: Unfortunately I have been away all winter and therefore was not in the State at the time this bill was being drawn up, and as I look it over now there are objections in the drawing up of that bill which make it impossible to pass. It is a very poor bill.

Dr. Park: The bill makes it mandatory on every community to do all these things. I do not see any reason why it should be compulsory in any way. All we want is an enabling act so that the communities can combine and give this Central Health Department some of the powers that are ordinarily vested in our City Boards of Health, and not define specifically just what they shall do. I am sure there would be less opposition and the same results could be accomplished.

The Chairman: Any further discussion?

Dr. Cook, Alton (Chairman of the Board of Health): We are here to learn, like some of those who have spoken. The city of Alton has never had any way of caring for its garbage. I have never had anything to do with it, except the last two or three weeks, and we have a city farm which is used for nothing, practically; rents for about sixty dollars a year, and that rent is not paid. I would like to know whether any city has had any experience in taking care of their own garbage with their own hogs? This farm could be stocked, so to speak, with hogs, and the hauling distance is not more than a mile, and the hogs could be taken care of there, I am very sure, without any objection from the surrounding neighborhood or the city in any way. I would simply like to ask, has any city ever undertaken such a thing?

The Chairman: Can anyone in the audience answer that question?

Dr. Henkel: I do not recall any city that has taken it up as an enterprise, but any number have contracted with individuals to dispose of the garbage that way—Grand Rapids, Michigan, and a number of cities in Massachusetts, Cambridge and some others that I do not recall.

Dr. Robison: I think the farms that are connected with the school at St. Charles are disposing of quite a good deal of garbage from St. Charles and using it for the purpose of feeding it to their pigs, stock, etc., and so far it has been all right. It is an experiment.

The Chairman: Before the meeting began I was talking with Professor Bartow of the University of Illinois on this very same matter, and I think he has something he would like to show you. I am going to ask him to show us what he has in this line.

Professor Bartow (Director of the State Water Survey): Mr. Chairman, the exhibit which I brought here for another purpose is for sewage disposal rather than garbage disposal, and I had not expected to show it here, but will be very glad to say a few words with regard to it on the invitation of your chairman.

Last summer I had the privilege of visiting a number of sewage disposal and water purification plants in Europe, and the scheme which impressed me most was a new scheme for the disposal of sewage by aeration, which has been suggested by Dr. Gilbert J. Fowler of the University of Manchester. This scheme for the disposal of sewage consists in blowing air into the sewage and developing what Dr. Fowler calls activated sludge. The process, in brief, is to blow air into sewage through some kind of diffuser. For instance, in our little plant we have a blower consisting of porous plates. Air is blown in and it bubbles up from the sewage. We allow that air to blow through until purification is complete. Then we take off the clear liquid and leave the sludge in the bottom, and continue that process a number of times, when the purification can be accomplished in a few hours. We can get, for example, complete purification of sewage by blowing air through a mixture of sewage with one-third its volume of sludge in four hours. By complete purification, I mean a clear, bright, liquid effluent which will not develop an odor on standing for any number of days, and I brought along a little exhibit to show—but perhaps I ought to confess to you what the object of bringing this over was. We have a bill before the Legislature for appropriations for the State Water Survey, and I am asking for additional funds for the construction of a sewage experiment station to carry on these sewage experiments on a larger scale, and I have shown these things to a few members of the committees.

Now this (holding up exhibit) represents the sewage of Champaign as it was taken from the sewer on the 16th of May, just a few days ago. That sewage—I don't know whether you care to pass these around and look at them. Don't smell too strongly of that! That (indicating) was mixed with sludge and air blown through it. You see a little sludge in here, but you can see the clear liquid above the sludge. In the third bottle I have some of the purified liquid, which has a slight odor. Now, this is the effluent from a new plant which is not in complete operation yet, and yet there is very little odor to it, and you can see how clear the liquid is. This has not been filtered.

An advantage in this process is that the sludge which is obtained is rich in nitrogen and makes a satisfactory fertilizer. It contains about 6.4 per cent.

nitrogen, which is about 2.4 as much nitrogen as in the septic tank process. We have analyzed that sewage and have also confirmed our chemical analysis by planting wheat in this sludge. Nos. 3 and 4 I will pass around. They have been fertilized with sludge. No. 2 was fertilized with an equivalent amount of nitrogen from dry blood, and No. 1 had no nitrogen added to it. That growth was nine weeks old when that photograph was taken. It shows that the nitrogen is in an available form for use as a fertilizer and that, estimated by current prices, it would be worth as a fertilizer at retail \$29 a ton, and about \$20 a ton wholesale.

Here is another photograph (indicating) of a test in which we have used this sludge, sodium nitrate, ammonium sulphate, gluten meal and dry blood. In this case also the nitrogen is more available than the nitrogen in these other conditions.

We have constructed a plant in which we expect to handle 10,000 gallons of sewage a day, and we hope to study the conditions under which the process will work best, the conditions of handling the sludge, etc., and hope to be able to develop the process satisfactorily.

I may say that we are not the only people in the United States who are working on the proposition. They are doing similar work in Milwaukee, at New York City and in Baltimore. The Sewerage Commission in Milwaukee is working on a proposition and are very enthusiastic over it. The chief engineer of the commission states that he will be able to do, if the process is satisfactory, on six acres what sprinkling filters would require 120 acres to do. The cost of construction will be very much less and it is hoped that the process will show, with the returns from fertilizer, that it will pay for the cost of the air and the cost of maintenance. We are doing out best to try out the process as soon as possible in order that the cities of the State of Illinois may benefit by this new process, if it is worth anything, and we surely hope that it will be.

I thank you, Mr. Chairman.

The Chairman: We thank you very much. We are glad that the Legislature happened to be in session.

The Chairman: Gentlemen, the four papers that we have just listened to have been well worth our time, and if that was all that we had this program would be well worth your time for coming here. We still have two or three papers which are extremely valuable and which I know that you will all be glad to listen to. The next paper on the program is "Some Pressing Public Health Needs in Illinois," by C. St. Clair Drake, Secretary of the Illinois State Board of Health.

Dr. Van Derslice: Mr. Chairman, may I have the floor?

The Chairman: Dr. Van Derslice wishes to say just a word.

Dr. Van Derslice: Mr. Chairman, I move you that you appoint a committee to draw up suitable

resolutions in behalf of this Section in regard to Professor Bartow's propaganda in regard to appropriation for his sewage disposal experiment station.

Motion seconded. Motion prevailed.

The Chairman: I will appoint Dr. Van Derslice, Dr. Park and Dr. Ruediger, who will present their resolution immediately before this meeting adjourns.

Dr. Drake has the floor.

Dr. Drake: Mr. Chairman, Ladies and Gentlemen: The subject of the paper indicates that I am about to present to you a big problem. I must necessarily present it in a very few words. Some of the very important features that I wish to bring out I must dismiss with a very brief paragraph. (Paper appears on page 122.)

The Chairman: This very important paper, gentlemen, needs practically no discussion. It simply states what the pressing needs of this State are in a very emphatic and definite manner and, therefore, instead of having any discussion on this paper, we will pass on to the next paper.

We will at this time listen to the report of the Committee on Resolutions.

Dr. Van Derslice: Resolution of the Section on Public Health and Hygiene of the Illinois State Medical Society:

Resolution adopted.

The Chairman: The committee that has drawn up the resolution will continue and see that it is reported.

We will now have the paper of Dr. John A. Robison, President of the State Board of Health. Dr. Robison.

Dr. Robison: Mr. Chairman, Ladies and Gentlemen: The hour is late and I do not know but what it would be just about as good a plan as any to read this paper by title; but it is very short. (Paper appears on page 93.)

The Chairman: Before we go, gentlemen, I have two little announcements to make. The first is that another paper which I have on the program will be printed in the ILLINOIS MEDICAL JOURNAL. It was not listed in the program. The subject will be "Sanitation, Personal and Municipal," by Dr. Charles J. Whalen.

It has been usual at this time to appoint a nominating committee to nominate the officers for the ensuing year. I have already heard from that committee, of which Dr. Whalen is chairman, and I will now ask Dr. Whalen to report.

Dr. Whalen: Mr. Chairman and Gentlemen: The committee wishes to present the name of M. W. Snell of Litchfield for chairman of the Section, and Dr. G. H. Ruediger of La Salle for secretary.

Report of committee unanimously adopted.

The Chairman: It will be obligatory on these gentlemen to have at least as good a meeting as we have had this year, which has been excellent.

Motion to adjourn; seconded.

The Chairman: This meeting stands adjourned. he has acquired the technic.

Society Proceedings

COOK COUNTY. CHICAGO OPHTHALMOLOGICAL SOCIETY

Meeting of March 15, 1915—Continued.

A NEW AND SAFE TECHNIC FOR THE CATARACT OPERATION.

Dr. William A. Fisher stated that if loss of vitreous and post-operative inflammation can be avoided in the extraction of a lens, it must be admitted that we are approaching an ideal cataract operation, inasmuch as normal vision is expected in every case where the cornea is clear and the fundus normal. The intracapsular operation more nearly approaches the ideal than any method he is familiar with, providing the operation is performed by operators skilled in the technic.

Dr. Fisher described the various steps of the operation by means of lantern slides, and mentioned two new details in the technic, one of which is the use of the lower lid hook which is original with himself, and the other, the employment of the needle to assist in the delivery of the lens when there is threatening or actual loss of vitreous. The bandage is an important part of the technic, but the greatest care should be taken against any kind of pressure. He prefers four thicknesses of gauze long enough to cover both eyes with a notch made for the nose to keep it from slipping away from the eye. The lashes are covered with carefully prepared yellow oxide of mercury ointment, grain one to a dram, and applied with a glass rod. The gauze is then laid upon the eyes and a starch bandage is applied.

Operators who have mastered the Smith technic will seldom use the needle or spoon.

After referring to accidents and complications that occur when performing the so-called classical cataract operation, Dr. Fisher drew the following conclusions: 1. Many lenses will be removed in capsule. 2. There is less post-operative inflammation. 3. Less infection. 4. Less secondary operations. 5. Less loss of vitreous. 6. Less time in hospital. 7. Better average vision. 8. Patients can be operated on any time the opacity incapacitates them from their ordinary duties. 9. Safer technic than the old operation for beginners as well as experienced operators.

DISCUSSION.

Dr. George F. Suker said a nice cataract operation is the quintessence of surgical skill, and since mastering the technic of intracapsular extraction, he feels safe in delivering the lens in its capsule. As regards the use of a fenestrated spoon for the delivery of a partially luxated lens, he does not think it is good surgery and gave his reasons for it. Judging from his own experience, one ought not to have any great difficulty in doing intracapsular extraction, provided

Dr. C. F. Burkhardt, Effingham, Ill., asked whether there was greater danger of loss of vitreous from the intracapsular operation as done by the average operator who had not mastered the exact technic if Smith or Fisher than from the old method of operating.

Dr. G. H. Mundt stated that until last October he held the same opinion as the majority of ophthalmologists in regard to the Smith intracapsular operation, but since seeing Dr. Fisher perform 12 or 15 of these operations, and having operated in this manner himself, the operation appealed to him very strongly. The vitreous did not present more than once in the 12 or 15 operations he saw. The lid hook simplifies the operation very much.

Dr. Thomas Faith emphasized the importance of mastering the technic of the Smith-Fisher operation, and since doing it he had performed the intracapsular operation in four cases, and although he was a doubting Thomas at first, he operation now appealed to him.

Dr. Oliver C. Tydings stated that so much had been said about loss of vitreous in the Smith operation that many members of the profession had learned to regard this as a part of the operation, but if one would study the statistics he would find they did not show a more frequent loss by this than by any other method, nor was this all, for if one would carefully analyze these losses he would find by the Smith method the loss was, as a rule, slight, while by the classical method, when the vitreous came ahead of the lens one felt very happy if he could extract the lens and get through with the toilet without losing more than one-third of the vitreous. By the safe method described it was almost a physical impossibility for a careful operator to lose vitreous. This safe operation had been made possible by the use of lid retractors to relieve all pressure, the double hook being one, and the needle to be used in case of necessity when trouble arose due either to too small an incision or too large a lens. By this method one would leave some capsules, but would save all vitreous.

The objection to leaving a bandage on for nine days was only the protest of the untried. The members of the society had every reason to be proud of the technic so materially aided in its development by one of the members. The Smith-Fisher technic was the best thing in cataract extraction. Dr. Fisher took the safest and best operation yet devised and had robbed it of every possible danger.

Dr. John R. Hoffman stated that since Dr. D. W. Green demonstrated the intracapsular extraction in 1912 in Chicago, he had been an advocate of the operation and had practiced it with good results. In many operations where he could have done an intracapsular extraction, he had to do the old operation because of unfavorable conditions present after the incision was made and the lack of knowledge of the technic for surmounting them. In his earlier operations he followed the technic as nearly as possible described by Dr. Vail in his clinical description of the operation, but he failed to get the idea of the use of the spoon in delivering the lens in impending loss of vitreous. Had he gotten the idea of the physics of the spoon delivery in mind, he thought he could have done more intracapsular extractions. He did not get the technic of the spoon until after the return of Dr. Fisher from India. Since then he had had some experience in its use and agreed with Fisher that it was liable to produce a decided disturbance of the vitreous. Since Dr. Fisher had given the technic of the use of the needle, he was reluctant to use the spoon except as a last resort, as with the needle, even though the capsule was ruptured, it was left in such position that very little irritation was caused by its presence, and it was out of the line of vision, or if it was not, it could be needled as after the old operation.

The lid retractors and hooks were a good substitute for the speculum.

Dr. Fisher had worked out a technic which would prove as near a safe one in cataract extraction as possible, especially in immature cases, where the patient would suffer great economical disadvantage in waiting for maturity, would do away with the dangers of the old operation, where capsule remained, and would also help the practitioner in doing many intracapsular extractions.

Dr. Fisher, in closing, answered the question of Dr. Burkhardt by quoting his last conclusion, which reads: "Safer technic than the old operation for beginners as well as experienced operators."

When he was working with Dr. Smith in India he thought the Smith technic was so good that it could not be improved, but as soon as he returned to Chicago and began operating he felt the necessity of modifying the operation and these modifications had been suggested to him in doing fifty intracapsular operations without Dr. Smith and his assistant. He believed, therefore, the technic he had described was the safest yet devised both for good operators as well as for beginners.

A regular meeting was held April 19, 1915, with the president, Dr. Richard J. Tivnen, in the chair.

PARALYSIS OF BOTH EXTERNAL RECTI.

Dr. William H. Wilder exhibited a little girl, seven years of age, previously perfectly healthy, who, while riding a bicycle, was thrown over the handle bars and struck against a wagon, injuring the right malar bone. She was not rendered unconscious, but somewhat stunned. There was hemorrhage from the left ear. The ear drum was ruptured, and there was considerable bleeding from this ear. She was nauseated soon after the injury, and about four or five hours following the injury it was noticed by her mother that her eyes were crossed. There was distinct and complete paralysis of the right external rectus, and almost complete paralysis of the left external rectus, otherwise the eyes were in every way normal. The media were clear. The eye grounds were normal, and she had vision of 20/20 or better in each eye without correcting glasses.

The fact that the paralysis did not occur immediately, but occurred some four or five or six hours after the receipt of the injury would seem to suggest it was not a fracture of the bone that caused injury of the nerve that passes over the tip of the deepest portion, but it was more than likely due to the hemorrhage that resulted from a rupture of some of the small vessels in the meninges. Possibly this explained the paralysis of the left external rectus as well as that of the right. He brought this forward as a suggestion and as the more probable explanation of the condition, and if so, it might hold out a more favorable prognosis than if the nerve itself had been cut, because then there would not be so much hope of regeneration and recovery would be longer delayed.

His experience with these cases was that he had only seen a few of them, but never saw a double one before. He had seen cases of injury of the sixth nerve from blows, both from fracture at the base of the skull and from a blow on the side of the head. The prognosis in those was fairly good. Recovery ensued anywhere from three to seven or eight months.

DISCUSSION.

Dr. Wesley Hamilton Peck said the drum membrane might have been ruptured and hemorrhage came from the ear on account of a fracture of the petrous portion of the temporal bone.

As to the sixth nerve being involved, he thought some light might be thrown on this by taking X-ray pictures in the

same position they were taken over the mastoid, the tip of the head, so that one could only get one temporal bone in the picture. If stereoscopic X-ray pictures were taken they would no doubt assist materially in showing if there was fracture of the temporal bone.

Dr. Brown Pusey stated that some three or four years ago a similar case came under his observation, the patient being a boy, fourteen years of age. He was thrown off of a horse. He made a recovery at the end of three months. In this case he attributed the paralysis to a hemorrhage at the base, catching both nerves along the course up under the pons.

Dr. Wilder, in closing, said that X-ray pictures had been taken by Dr. Potter, but he had not had an opportunity to study them as yet, but would soon do so. With stereoscopic X-ray pictures one might be able to see a fracture if there was one present.

ULCER OF THE CORNEA COMPLICATING COW-POX INFECTION.

Dr. J. Sheldon Clark stated that he did a good deal of his work in a dairy district, and it was his fortune to see two cases of ulcer of the cornea complicating cow-pox. In the first case the eye was lost.

The case he reported was that of Mr. A. L., 32 years of age, who came to him last spring for an ulcer of the cornea. He had a cow-pox infection at the time he came and had a number of vesicles on different parts of the body, particularly on the hands and face. He had a large corneal ulcer which covered about one-half of the cornea. This healed under treatment which lasted for a few months. In a dairy district one occasionally saw such infections on the hand, but he had only seen two of them infecting the eye. In this case the systemic symptoms were marked and were similar to those of smallpox. Patient also had pigmentary nevus in one eye.

KERATITIS PETRIFICANS.

Dr. Harry S. Gradle presented a case for Dr. Young, of Burlington, Iowa, who unfortunately was unable to be present. The patient suffered from a foreign body in the left eye for about twenty months. Two days after the foreign body entered the eye an ulcer appeared which lasted for two months. Following the ulcer there remained a scar on the left cornea. This had not changed markedly in size in the past fifteen months, although yellow oxide of mercury, massage, and iodids internally, and practically everything else had been resorted to except surgical interference. This scar was rather tense, involving the superficial areas of the cornea. The eye was painful, and the man could not get very much better vision. The patient wanted to get relief, and the speaker expressed a desire to have the case discussed and, if possible, some suggestions offered with reference to treatment.

DISCUSSION.

Dr. George F. Suker, in discussing the case presented by Dr. Gradle, said that calcareous degeneration of the cornea or lime deposits did not occur in an eye that was chronically inflamed, or had chronic inflammation of some kind or another. If the eye was let alone, he was under the impression that the patient would lose it entirely and it would have to be enucleated on account of pain. He had had just such an experience in two cases, and had he known then what he knew now he might have saved the sightless eye, which was better than a glass eye by having this portion

of the cornea excised and a corneal graft transplanted, or the whole thing might be excised with a cataract knife, and in addition a flap turned over with the conjunctival flap. In this way the eye could be saved and the pain stopped.

Dr. Wilder said it seemed to him that the pupil was not more than half covered and before attempting anything so radical as a grafting operation, which is difficult and uncertain he thought it would be proper to excise this portion of the cornea by curettment and then possibly add to that the cautery. Both methods combined, curettment and then cauterizing this area, might destroy the nerve endings and relieve the man entirely of the pain and make a good white scar. It did not make any difference so far as the sight was concerned if it did not encroach any more upon the pupillary area of the cornea. He thought this was the measure to try before attempting a more difficult keratoplasty.

Dr. Harry S. Gradle mentioned a method which was advocated years ago, namely, to trephine an area about the size of the scar, taking in clear corneal tissue about half the depth of the cornea, turning a trephine button on itself and clearing away some of the scar from the pupillary area. The man who had suggested this method had met with success in several cases, but the turned button had remained. If there was a possibility of doing this the pain would be less.

OPTIC NEURITIS.

Dr. Emory Hill presented and reported a case of optic neuritis. The patient, a man, 29 years of age, consulted him last October with headaches which were relieved by refraction. Patient had approximately one and a half D. of hyperopic astigmatism in the eye. The unpleasant thing was the appearance of the eye grounds. The left eye had a swelling of the disc $2\frac{1}{2}$ D. The right eye had no swelling of the disc, but a distinct arteriosclerosis of the retinal vessels. The patient stated that at intervals for five years he had been told that he had something interesting about his left eye. He had had examinations made, but nobody had discovered anything wrong except he had a peculiar nerve. His vision with correction was $6/4$ in each eye. In October there was no enlargement of the blind spot. When he presented the patient last month before the society he thought the swelling of the left nerve head might be congenital, a so-called pseudo-optic neuritis. Since last month the right disc, which was not swollen in October, had become blurred and swelling had come on, which was at least 2 D. in height. The swelling in the right eye was more typical of optic neuritis than in the left. The vessels dipped in and out of the edematous area. Vision was still $6/4$ with correction, but there was a distinct enlargement of the blind spot for red and a trifling enlargement for blue and white in each eye. A Wassermann was negative. Careful physical examination showed the urine negative, and blood pressure normal for his age. Patient had a rather full and firm radial artery. He had a sclerotic condition of the vessels in the right eye. His sinuses, nose, tonsils and teeth were normal.

The diagnosis was interesting. Unquestionably the condition in the right eye was a true neuroretinitis, while the condition in the left eye, he was inclined to think, was the same, and not a pseudo neuroretinitis as he supposed at first.

DISCUSSION.

Dr. George F. Suker stated that Dr. Hill's case resembled the case of a woman whom he presented to the society

two months ago, where the condition began in one eye and then traveled to the other. It extended over a period of a number of years. Whether the two cases were alike he could not say, nevertheless one should make a skiagram.

Dr. Brown Pusey recalled one case in which there was a pseudo optic papillitis in one eye, but not in the other.

Dr. Casey A. Wood said that when Dr. Hill described his case he thought it might be one of pseudo optic neuritis, as such cases had been described in the literature, but with enlargement of the blind spot he thought one was justified in believing it was a case of optic neuritis, with well-preserved central vision and without any limitation of the peripheral fields.

Dr. William H. Wilder did not think that all cases of optic neuritis were symmetrical. There was apt to be asymmetry in these cases as in other anomalies, but in this particular case he thought it could be excluded from Dr. Hill's observation of the swelling. The optic nerve head in the right eye was elevated 2 D. and it covered $2\frac{1}{2}$ D. In the cases of pseudo optic neuritis he had seen there was a considerable connective tissue element in the retina immediately surrounding the margin of the optic disc, which gave it the simulation of optic neuritis. However, a more careful study of the case might indicate it was not a real inflammatory process or an edematous process at the head of the optic nerve. This case had more the appearance of a real optic neuritis and he thought it must be that.

BIRTH INJURIES OF THE EYE.

Dr. C. P. Small stated that a study of recorded cases showed a general agreement in the following particulars: Practically all have followed a difficult instrumental delivery, although cases have been reported of an unusually long confinement, associated with a contracted pelvis, where injury occurred when no instruments were used. One eye alone was generally affected. The injury was usually associated with other signs of traumatism, as abrasions of the skin, subconjunctival or retinal hemorrhage, hyphemia, etc., and that a more or less characteristic form of corneal opacity was usually present. The most frequent of all forms of birth injuries are those involving the cornea.

After going extensively into the literature of birth injuries of the eye, Dr. Small reported the following case:

The patient was 11 years of age, the younger of two children. Her mother says it was a breech presentation, that after a very long and painful confinement she was given chloroform, and the child delivered with forceps. There was an extensive perineal laceration. The child weighed $14\frac{1}{2}$ pounds. At the present time there are scars on both sides of the head over the parieto-temporal areas, made by the forceps, the one on the right side showing that the wound had been deep, while the tip of the same blade cut the lower right eye-lid, resulting in the scar which was shown by a drawing. There are three distinct linear opacities extending vertically across the entire cornea. In addition to the corneal injury there is a partially opaque lens, dislocated upwards. There is the tremulous iris which accompanies this condition. There is atrophy of the optic nerve, and a slightly increased intraocular tension. Vision was reduced to counting fingers at four inches. Vision in the left eye, with a $+0.50$ cylinder, axis 90° is 20/20.

The lower edge of the lens appears less curved than usually appears in this condition, and much

darker in color than the remaining portion of the lens. A similar condition was seen in a case reported by Wurdemann where there was a partial upward dislocation of the lens. A brown line extended across the lens, evidently the remains of a blood stain from a hyphemia which was present after birth. In addition to the cases already mentioned, this peculiar and unusual form of linear opacity due to rupture of Descemet's membrane at the time of birth has been observed by Braav, Green, Henderson and others.

DISCUSSION.

Dr. Wesley Hamilton Peck had seen a case of birth injury of the eye similar to the one reported by the essayist. He exhibited a case to the society several years ago of extreme proptosis following delivery. Subsequently this condition receded and assumed a normal position.

Dr. J. Sheldon Clark stated that two weeks ago he was called by a general practitioner to see the case of a young child some three days old, presenting a peculiar condition of the cornea. The cornea looked as white as though carbonic acid had been dropped on it. The doctor was perturbed in regard to it and asked whether delivery had anything to do with it. In looking up the literature he had found there were such cases. However, the condition cleared up in three or four days' time.

Dr. Small, in closing, stated that in his paper there were a number of references to other forms of birth injuries, especially those of the cornea and temporary opaque opacities. There was one case reported where the eye was partially lying on the cheek at the time of birth. There were also cases of strabismus from injury of the muscle, as well as in other portions of the body. All these came under birth injury proper.

THE SCLERO-CORNEAL SETON IN THE TREATMENT OF GLAUCOMA; A PRELIMINARY REPORT.

Dr. Casey A. Wood stated that without attempting at this time to develop or discuss the arguments for such a desirable end, after some preliminary lower animal experimentation the operation he was about to describe was done on two human subjects. The results were so encouraging that he now presented one of the subjects operated on and hoped the method might commend itself to the judgment of the members so as to give it a trial.

For the purpose of this experiment cases were chosen that had failed of relief at his own and at other's hands by the usual operative measures.

The first case was that of a boy, aged 11, first seen on November 28, 1913. About two years previously he bumped his left eye against the corner of a chair. A concussion cataract formed, which was removed by another ophthalmic surgeon. Some thickened capsule remained. Three months afterwards there was much pain in the eye when the surgeon did a large, upward iridectomy, for the relief of glaucoma. Since then the vision had become steadily worse and the mother thought the eye-ball had grown larger. The patient had had attacks of pain in the left eye for some time, and the vision was reduced to perception of hand movements. As the tension remained plus 1, an Elliott trephining was done, under nitrous oxid gas and ether, on December 11, 1913. The operative wound healed nicely and the patient did fairly well

until about three months ago, when the pains and discomfort in the left eye returned and the tension again rose to plus 1. The patient's tonsils and some adenoids were then removed, without effect upon the ocular situation. A month ago a scleral seton was introduced. The reaction was inconsiderable, and drainage had since been well established. Tension was now normal both under finger pressure and by tonometric readings.

Dr. Wood reported a second case, and then described the procedure he had adopted in these two cases, as follows:

The eye is carefully rendered as aseptic as possible and the pupil is contracted by eserine. A narrow Graefe knife, with a hole near its point, is introduced and passed in precisely the same fashion as in the preliminary step of an anterior sclerotomy. The puncture and counter-puncture are made entirely in the sclera, but as near the clear corneal margin as possible, so that at least one-half the operative wound communicates with the anterior chamber. When the point of the instrument emerges from the lobe at the counter-puncture one needle of a double armed, white, 00 braided, silk suture, about eight inches long, is passed through the hole in the knife point. After a number of trials, it was found that a half curved needle is better adapted to the purpose than a straight one. It should be just large enough to pass easily through the eye of the knife, and should not be more than two-thirds of an inch long. Thus armed, the knife is withdrawn, so that about the same lengths of double sutures protrude from puncture and counter-puncture. The knife is now freed from the sutures with scissors, and the first needles are with a needle holder separately passed (by way of the counter puncture wound) in different directions and for the length of the needle, beneath the ocular conjunctiva. The loose ends of suture corresponding to the puncture opening are then threaded and the same maneuver is practiced on that side. The so-called split or patent eye needle is most useful here, since a wet, sterilized suture can be immediately threaded upon it; otherwise valuable time is sure to be lost in vain attempts to pass damp threads through the eye of the ordinary needle.

It matters not what form of anesthesia be used, but it is well to employ a mixture of cocaine and adrenalin locally to staunch the bleeding from the scleral wounds.

DISCUSSION.

Dr. William A. Mann asked Dr. Wood if he put in a double thread. In most of the operations only one thread was used. Personally he thought a double thread was better. He would also like to ask as to the kind and size of the silk.

Dr. Wood, in reply, said that if one thread corresponding to two filtration area tracts are good, he thought four would be better than two. He really had that in mind when he thought of utilizing the double ends of the suture. Where we get four tracts or four canals he thought there was or might be some additional irritation. He did not believe, however, a double thread would irritate more than a single thread would.

As to the kind of thread used he had employed different sizes in animals, but he used a double knot braided silk thread—white. The size was 00.

FULTON COUNTY

The seventy-second meeting of the Fulton County Medical Society was held in the Auditorium of the Y. M. C. A. building in Canton, Ill., July 6, 1915, and was called to order at 2 p. m., by President Howard.

On motion the courtesy of the Society was extended to Dr. A. J. Hinkelman of Galesburg in that he be permitted to present his paper at the present time in order that he may return home on the train.

Dr. Hinkelman presented a paper on the "Bacteriology of the so-called Intestinal Influenza."

Discussion was lead by Dr. Snively.

On motion a vote of thanks was tendered Dr. Hinkelman for his presence and his presentation of such an excellent paper.

On proper application from Dr. F. L. Clemens for a withdrawal card to the Knox County Medical Society the secretary was instructed to supply Dr. Clemens with the same.

On account of illness Dr. Finley of Galesburg could not be present to fill his number on the program.

Secretary Ray having arrived Dr. Stoops, secretary pro tem, gave place to him.

The minutes of the May meeting were read and approved.

State Delegate Snively made a report of the state meeting at Springfield.

Dr. Stoops, chairman of the committee on constitution and by-laws was ready to report.

Snively and Cluts moved that the proposed constitution and by-laws be voted on one section at a time as they were read. Carried.

On motion of Drs. Cluts and Bunch section IV was changed to read,

"That the time and place of four meetings remain the same as under the present Constitution and that two migratory meetings be added and that the time and place of the two migratory meetings be determined during the year by the program committee."

Oren and Coleman moved that the Secretary prepare an historical sketch, list of officers, list of active members, list of honorary members, deceased members and give to the committee to be included with the printing of the Constitution and By-Laws. Carried.

Oren and Shallenberger moved that the several chapters and sections as read and adopted of the proposed Constitution and By-Laws be hereby adopted as a whole to take effect October 1, 1915, and that the committee be instructed to have three hundred of the same printed. Carried.

The following members were present: Howard, Stoops, Shallenberger, Oren, Snively, Parks, Welch, Gray, Putnam, Cluts, Coleman, Clemens and Ray. Total 13.

COLLECTIONS.

A. C. Cluts.....	\$5.00
F. L. Clemens	3.50

Total	8.50
-------------	------

D. S. RAY, Secretary.

MADISON COUNTY

The Madison County Medical Society met at the Alton State Hospital on July 2, 1915, with President Dr. Lay G. Burroughs, presiding. Nineteen members present; thirteen visitors.

The minutes of the last meeting were read and approved. Dr. M. W. Harrison of Collinsville, made a request that the August meeting of this society be held at the Harrison Tubercular Colony annually, which was granted. The secretary was instructed to arrange a meeting for Marine, to be held on the first Friday in September, to accommodate the members living in the eastern part of the county. The secretary reported the receipt and distribution of 8,000 book-marks to be used by the several public libraries of the county, as recommended by the National Society for the study and prevention of tuberculosis. He also reported the receipt of a stock lecture and 27 lantern slides, on the subject of tuberculosis, recommended by the same society. This lecture together with slides and our stereopticon, is at the disposal of any of our members who will use the same to give greater publicity to our tuberculosis work along educational lines.

Dr. H. Douglas Singer, superintendent of the Psychopathic Hospital of Kankakee, made an address along psychopathic lines, which was highly instructive and was received with marked attention.

Dr. Geo. A. Zeller, alienist of the state board of administration gave a most excellent address on the "Status of Leprosy" in which much information was given that was decidedly new to the majority of his hearers.

Hon. A. L. Bowen, executive secretary of the state charities commission, made a short address comparing the more recent treatment of patients at the State Hospitals with the treatment under the old system, emphasizing the absence of all forms of mechanical restraint. A vote of thanks was tendered to all of our distinguished speakers. Elegant and substantial refreshments were served in profusion by our host, Dr. Harry S. Seiwel, medical director of the institution, which were highly appreciated and acknowledged by a vote of thanks.

Adjournment to meet in Collinsville on the first Friday in August.

E. W. FIEGENBAUM, Secretary.

McHENRY COUNTY

A joint meeting of the Medical Societies of Boone, Kane, McHenry, Stephenson and Winnebago Counties was held at Rockford, February 9, 1915.* It was well attended. The excellent program, a copy of which was mailed to all our members at the time, was rendered. Doctors Smith, Seelye, Johnson, Baccus, West and Windmueller attended from this county.

The McHenry County Medical Society was called to order by the president, Dr. A. B. Smith in the

*The joint meeting was reported in the March Journal, page 251.

Woodstock Hotel at 10:45 a. m., Friday, April 30, 1915. Sixteen members present.

The minutes of the October 10, 1914 meeting, which was the last previous one held in this county, were read and approved as read. A communication was then read by the secretary from the legislative committee of the state society, asking our society to communicate with our representatives in the legislature requesting them to oppose the passage of the Optometry Bill, and a motion was duly carried that the secretary be instructed to forward the desired communication.

The secretary read a request from the Jefferson County Medical Society that our delegate to the State meeting be instructed to support a measure to have a redefinition of the Illinois Medical Practice Act so that it will include the terms and means employed by charlatans and frauds, such as "Dr.," "Professor," "Eye Sight Specialist," "Magnetic Healer," and a motion was duly made, seconded and carried that the delegate be so instructed.

It was then moved by Doctor Windmueller that our annual meeting be held in about a month at Crystal Lake and that the secretary be instructed to invite the Kane County Medical Society to meet with us. Motion carried.

It was moved by Dr. Chas. C. Peck that the present officers be declared re-elected, whereupon Dr. A. B. Smith, president, stated that having served two years as secretary and one as president he deserved to be relieved. The following officers were then duly elected: president, Dr. C. W. Goddard; vice-president, Dr. Hyde West; secretary-treasurer, Dr. N. L. Seelye; censor, Dr. Chas. C. Peck, to succeed Dr. E. V. Brown, making the order of succession—Baccus, Pflueger and Peck; delegate to the Illinois State Medical Society for two years, Dr. N. L. Seelye.

President Smith called the attention of the members to the new "State Rules for the Control of Communicable Diseases," on pp. 313 and 314 of the April number of the ILLINOIS MEDICAL JOURNAL, stating that as city physician for Woodstock he had secured from the state board of health copies of the new quarantine regulations issued by the board and had distributed same to the physicians of Woodstock and suggested that the same be done at once in the other towns of the county.

Doctor E. Windmueller, Councilor for the First District, then stated in regard to the medical defense furnished to members by the State Society that much money had been wasted through doctors, threatened with suits, engaging local attorneys and incurring a large expense before reporting to the proper officers of the State Society. That in the future the State Society would be less free to pay such bills and that any member delinquent in dues would not be eligible to financial aid by the State Society. (This statement was followed by a general stampede for the payment of dues by the delinquent members.)

Dr. H. M. Francis of Woodstock showed a burn

case and made a detailed report, the following abstract was kindly furnished by Dr. Francis:

"A five-year-old girl received, two years ago, severe second and third degree burns, mostly over the anterior and left side of abdomen, covering $\frac{1}{4}$ to $\frac{1}{2}$ the body surface. Five month's treatment gave a perfect functional result and comparatively slight scarring. After the first day pain was almost entirely absent. Shock was overcome by morphin, strychnia and whiskey. Toxic absorption was combated by enemas of sodium bicarbonate. Infection was controlled by 5 per cent. iodine in oil and weak dilutions of Lugol's solution in water. Skin-grafting was performed on the 22nd day. Out of 40 grafts, taken from 20 young men, only two failed. The entire grafts adhered. At the end of the second month an accident revealed and unsuspected necrosis of the internal oblique and a second grafting was performed 18 days later. Two per cent. scarlet red ointment stimulated granulations markedly, but did not check pus formation and was consequently alternated with iodine solution. Patient was gotten out of bed from 19th day with great benefit to her general condition. The principal feature of treatment was entire lack of dressings, the wound being protected by a wire cage that allowed the free access of circulating air.

Dr. N. L. Seelye of Harvard demonstrated two cases of acute mastoid disease in which he had performed mastoid operations three years and three weeks ago, respectively, and emphasizing the importance of early paracentesis in cases of ear-ache, as a conservative measure, cutting short the disease, preventing deafness and mastoid complications.

The meeting then adjourned to the dining room where a bounteous chicken dinner was had, after which all attended a lecture at the local theater, by Mr. McKenzie of the H. K. Mulford Company, illustrated with moving pictures on the methods employed in the manufacture of serums and vaccines.

JACKSON COUNTY

The second quarterly meeting of the Jackson County Medical Society met at Carbondale, July 1, 1915. There was no scientific program. This meeting was an out door affair and the hum-drum of daily practice was forgotten for that day.

The entire society and their families were entertained by the Carbondale physicians who secured the use of Thompson's lake, where they served dinner in such a bountiful manner that when all were well filled there was enough left for as many more.

After dinner the happy crowd indulged in fishing, boat-riding and swimming to their heart's content.

This was by far the best meeting socially the society has ever had and we owe its success to the ability of the Carbondale physicians and their wives to entertain.

The next meeting will be held at Carbondale Sept. 16, 1915,

LOUIS R. WAYMAN, Secretary.

STEPHENSON COUNTY

Despite the heat and oppressive barometer there was a fine turn-out of doctors at the mid-summer meet-

ing of the Stephenson County Medical Society on Thursday, July 15, 1915.

Promptly at 12:30 dinner was served by the Brewster House management, and twenty-five covers were laid. Twenty-three members and four guests were present at either the dinner or the meeting.

A four-course dinner was served. A vote of thanks was extended section number four for the arrangement made for the entertainment of the society. Much credit is due the management of the Brewster House for the splendid service. Our society has found that the division of the membership into four groups, with one man selected as "captain"; and whose function is to provide a dinner place of meeting and other necessary arrangements, has been of inestimable value to our meetings.

Immediately following the dinner the society adjourned to the parlors where the program was given as follows:

1. "Some Ocular Manifestations of Arterio-sclerosis," Dr. W. J. Rideout.

2. "Principles Underlying the Treatment of Septic Peritonitis," Dr. J. E. Allaben, Rockford.

3. "Clinical Cases". Dr. J. H. Stealy presented a case of sarcomatous cyst of the tibia, with x-ray plates showing the effect obtained after bone transplantation. Dr. Harlan exhibited a specimen of hypernephroma that had recently been removed.

Dr. Cuthbert J. Leavy, delegate from the society to the State meeting at Springfield, made a very good report of what took place in the House of Delegates. No mistake was made in sending Dr. Leavy as our delegate, for he evidently was "on the job" and in the "main tent" from start to finish, and not out seeing the "side shows." It was the doctor's opinion that every practitioner of medicine should be allied with his local county society, and helping to make it truly the representative unit of medical organization.

The secretary read a communication that he had received from R. J. Simpson, secretary of the local Chamber of Commerce, in which it was stated that the recent request of the committee sent by the society to enlist his services in securing better train communication had accomplished several improvements. Dr. Clark also spoke of his recent trip to Springfield in conjunction with several members of the Chicago Ophthalmological Society and of the fruitlessness of their mission. The trip was made for the purpose of being present at the hearing given by Governor Dunne on House bill No. 9, known as the Optometry Bill. Our delegation looked very small compared with the seventy-five or more opticians that were there from all parts of the state in the interest of this bill. From the apparent state of mind the Governor we "went away sorrowful," knowing full well that it was a lost cause. Thus medicine stands idly by and sees yet another limb torn asunder, and given as a prey to "half baked" doctors.

J. SHELDON CLARK, Secretary.

WINNEBAGO COUNTY*Regular Meeting, June 8, 1915.*

The Winnebago County Medical Society met at the Nelson House, Rockford, on June 8, with Dr. H. M. Starkey in the chair. Seventeen members present and two visitors. Minutes of two previous meetings were read and approved.

This being a clinical meeting on vaccines, cases were reported and illustrated by local members. Dr. John Tuite reported good results with use of vaccines in acne of face, pyelitis with pregnancy and chronic bronchitis.

Dr. George Gill illustrated two cases; one a young boy who had never been well since three months of age and had had several serious diseases, and who became perfectly well following removal of tonsils and the use of vaccine. The other case was a young man with symptoms of chronic lagrippe and sciatica. He, too, recovered with use of vaccines.

Dr. T. H. Culhane reported some very interesting cases of whooping cough and erysipelas treated by vaccines with rapid improvement. General discussion followed.

It was moved and seconded that a joint meeting of local doctors and dentists be held in September and that the president and secretary form a committee to co-operate with the officers of the dental society to bring about such a meeting. Motion carried.

The meeting then adjourned.

Dr. C. M. RANSEEN, Secretary,

WOODFORD COUNTY.*EUREKA, ILL., May 4, 1915.*

Woodford County Medical Society met in annual session in the courthouse at 10 o'clock a. m. Meeting called to order by President W. S. Morrison. Members responding to roll call were C. F. Banta, F. E. Briggs, N. B. Crawford, W. C. Cotton, R. E. Gordon, F. H. Henderson, J. I. Knoblauch, H. A. Millard, W. S. Morrison, F. C. Nichols, F. W. Nickel, R. H. Smith and James Tweddale. Minutes of previous meetings read and approved. Report of secretary-treasurer read and approved.

S. M. Burton of Low Point was elected to membership in this society.

Moved and seconded that the delegate be instructed to use his full influence against the ruling of the collector of internal revenues, whenever opportunity should present, regarding the dispensing of opiates and the recording of same. Motion carried.

The following officers were then elected for the ensuing year: President, F. W. Nickel; vice-president, F. C. Nichols; secretary-treasurer, H. A. Millard; delegate for 1916 and 1917, H. A. Millard; alternate delegate for 1916 and 1917, F. H. Henderson; censor for three years, L. E. Bratt. Present board of censors: J. I. Knoblauch, F. W. Wilcox and L. E. Bratt.

The following program was then given:

"Rheumatic Arthritis," F. W. Nickel.

Report of Cases, F. C. Nichols.

Two cases of Ascites with Differential Diagnosis, R. H. Smith.

A number of interesting cases were reported by other members and freely discussed by all present.

Adjourned.

H. A. MILLARD, Secretary.

Personals

Dr. Alice Hamilton has returned from abroad.

Dr. Chester H. Latham, Pecatonica, is reported to be critically ill with nephritis in St. Anthony's Hospital, Rockford.

Dr. Franklin J. Drake, president of the Lombard College, has resigned and will re-enter the practice of medicine.

Dr. and Mrs. W. H. C. Smith of Godfrey, chaparoned a party of sixty students from Lindenwood College at the Panama exposition.

Dr. Augustus W. Chandler, formerly of Dixon, now in charge of the Lincoln Hospital, Rochelle, fractured three ribs in the overturning of an automobile, July 5.

Dr. Theodore B. Sachs is holding over as superintendent of the Chicago Tuberculosis Institute, pending the appointment of his successor. His commission expired July 1.

Dr. John Dill Robertson, Chicago, has been appointed a member of the board of trustees of the Chicago Municipal Tuberculosis Sanatorium, succeeding Dr. George B. Young.

Drs. Chas. B. and Annetta A. Saunders, 919 N. La Salle street, Chicago, spent last month in the Ozarks and will take a Mississippi river trip before returning to the city, September 1.

Dr. John H. Siegel, mayor of Collinsville, held the lucky ticket and won a six cylinder seven passenger Paige automobile at the recent Elks State Convention held in East St. Louis.

News Notes

—The new Royal Arch Memorial Hospital at the Illinois Masonic Home, Sullivan, was dedicated July 5.

—An automobile ambulance has been donated by Mr. John T. Crane for the use of the Iroquois Memorial Hospital, and the health commissioner has asked the council for an appropriation for the maintenance of the car.

—Trustees of the Elizabeth McCormick Memorial Fund have been notified that their open-air school exhibit at the Panama-Pacific Exposition has been awarded the grand prize for school hygiene, a medal of honor and a gold badge in education.

—In the baby-saving crusade of the department of health, six fresh-air colonies have recently been established in congested parts of the city, and ninety-three nurses, six supervising nurses and three supervising health officers are occupied in reducing the number of deaths among babies during the hot season.

—Mr. George F. Porter, chairman of the Murray Depage Memorial Fund, announced on July 2 that the fund of \$20,000 has been completed and will soon be forwarded to Dr. Antoine Depage, surgeon general of the Belgian Red Cross. This fund is in memory of Madame Depage, who, after effective work for Belgium, both here and abroad, lost her life on the Lusitania.

—The superintendent of health of Oak Park, after a persistent investigation as to the cause of typhoid fever which has been epidemic in that suburb of Chicago, announces that he has found the typhoid carrier in the person of Mrs. Mary Burke, who for three years has been at work in the lunch room of the Oak Park High School in which so many cases of the disease occurred. She is now detained under police surveillance in the Oak Park Hospital.

Marriages

EVERETT BENSON WILLIAMS, M. D., to Miss Cecelia R. Daly, both of Chicago, May 3.

SAMUEL D. ROSENTHAL, M. D., to Miss Tubie Greenspahn, both of Chicago, July 4.

ARTHUR T. BETTS, M. D., Chicago, to Miss Florence Bras of Seattle, Wash., June 19.

PETER JOSEPH CHRISTENSON, M. D., to Miss Clara Mulligan, both of Chicago, June 30.

JOHN WILLIAM GOGGIN, D.D.S., to Miss Margaret Helen Mann, both of Chicago, June 12.

FELIX J. MACIEJEWSKI, M. D., La Salle, Ill., to Miss Angela Piszczek of Peru, Ill., June 2.

LYSTON D. HOWE, M. D., Streator, Ill., to Miss Lillian Monroe of Joliet, Ill., in Chicago, June 16.

IRA ELMER HOFFMAN, M. D., Chicago, to Miss Florence Emilie Demaree of Madison, Ind., June 14.

HARRY MORTIMER RICHTER, M. D., to Miss Adelyn Ruth Windmuller, both of Chicago, June 23.

Deaths

ISAAC H. KELLY, M. D. College of Physicians and Surgeons, Keokuk, Iowa, 1880; died at his home in Stone Fort, Ill., May 27.

ELMER ELWOOD HALL, M. D. Chicago College of Medicine and Surgery, 1903; aged 50; died at his home in Chicago June 21, from tuberculosis.

GEORGE A. HIBBERT, M. D. College of Physicians and Surgeons, Chicago, 1893; died at his home in Chicago, May 15, from angina pectoris, aged 48.

JOHN FRANKLIN HOLT, M. D. Rush Medical College, 1884; of Assumption, Ill.; died at St. Mary's Hospital, Decatur, May 17, from diabetes, aged 75.

A. S. CHILDS, M. D. Hahnemann Medical College, Chicago, 1878; of Chicago and Wilmette, Ill.; died at his home in Wilmette about June 21.

J. ELIZABETH TOMPKINS, M. D. Harvey Medical College, Chicago, 1896; for twenty-five years a practitioner; died at her home in Chicago, May 26, aged 70.

DUDLEY, O. WEDGE, M. D. Jefferson Medical College, 1874; formerly of Ipava, Ill.; but since 1908 a resident of Chicago; died at the home of his daughter in that city, May 11.

JAMES EDWARD RANKIN, M. D. Keokuk (Iowa) Medical College, 1891; of Watertown, Ill.; died in the Watertown State Hospital, June 6, from an overdose of an opiate, aged 47.

THADDEUS F. HAMER, M. D. University of Marburg, Germany, 1884; aged 70; for many years a practitioner and druggist of Lincoln, Ill., but since 1912 a resident of Los Angeles; died at his home in that city, June 24.

FRANTZ JOSEF MEYER, M. D. Missouri Medical College, St. Louis, 1887; a member of the Illinois State Medical Society; died at his home

in Evansville, Ill., about May 10, from carcinoma of the inferior maxilla, aged 50.

FRANKLIN ELLIS KELLY, M. D. Louisville Medical College, 1895; a member of the Illinois State Medical Society; also a druggist; died at his home in Green Valley, Ill., April 29, aged 59.

HUGH THOMAS D'ARCY, M. D. Wisconsin College of Physicians and Surgeons, Milwaukee, 1897; for several years a practitioner of Bloomington, Ill.; died at his home in Chicago, May 13, from sciatic rheumatism.

SAMUEL COLE, M. D. Rush Medical College, 1865; New York University, New York City, 1866; a Fellow of the American Medical Association; died at his home in Chicago, June 5, from heart disease, aged 70.

CLAYTON M. STEWART, M. D. Missouri Medical College, St. Louis, 1857; Jefferson Medical College, 1860; for many years a practitioner of Scott County, Ill.; died at his home in Jackson-ville, Ill., April 30, aged 83.

JOHN WERTON HAMPTON, M. D. Rush Medical College, 1912; of Norway, Mich.; physician for the Loretto (Mich.) Mining Company; died in St. Joseph's Hospital, Chicago, June 3, from lymphatic leukemia, aged 26.

KARL A. NORDERLING, M. D. College of Physicians and Surgeons, Chicago, 1887; formerly of Chicago, but since 1908 a resident of Paxton, Ill.; died at his home in that city, June 9, after a long illness, aged 58.

EMIL KUNZ (license, Illinois, 1891), a practitioner since 1877; a member of the German Medical Society of Chicago and a well-known anatomic draughtsman; died at his home in Chicago, May 25, from cerebral hemorrhage, aged 66.

CHARLES WILLIAM PRENTISS, M. A. Middletown, 1896; Ph. D., Harvard University, 1900; aged 40; professor of microscopic anatomy in Northwestern University Medical School, Chicago; died in Wesley Hospital, Chicago, June 12.

JAMES PERRY WALTERS, M. D. Miami Medical College, Cincinnati, 1876; formerly a member of the Illinois State Medical Society and secretary of the Wayne County Medical Society; a veteran of the Civil War; died at his home in Fairfield, Ill., May 9, aged 66.

FRANKLIN J. CLAY GRIFFITH, M. D. Cincinnati College of Medicine and Surgery, 1874; died at his home in Annapolis, Ill., May 27, aged 71.

JOHN BLAIR GUTHRIE, M. D. University of Toronto, 1889; an advertising specialist of Illinois; died at his home in Evanston, Ill., June 5, from tuberculosis, aged 45.

PETER EDWIN TOVEY, M. D. College of Physicians and Surgeons, Keokuk, Iowa, 1883; aged 60; a member of the Illinois State Medical Society; supreme medical examiner of the order of the Magi; died at his home in Galesburg, June 23, from angina pectoris.

REUBEN WILLIS BOWER, M. D. Northwestern University Medical School, 1870; a member of the Illinois State Medical Society; a veteran of the Civil war, in which he served in the hospital corps; for more than forty years a practitioner of Sheridan, Ill.; died at his home June 10, from cerebral hemorrhage, aged 76.

ALBERT S. CORE, M. D. Rush Medical College, 1879; a Fellow of the American Medical Association and a specialist on diseases of the eye, ear, nose and throat; formerly of Du Quoin, Ill., and Chicago, but for the last seven weeks a practitioner of Mendota, Ill.; died in his office in that city June 16, from cerebral hemorrhage, aged 65.

JOHN W. COLEMAN, M. D. Miami Medical College, Cincinnati, 1856; Medical College of Ohio, Cincinnati, 1858; assistant surgeon of the Forty-First Illinois Volunteer Infantry throughout the Civil war; for more than half a century a practitioner of Monticello, Ill., and first superintendent of schools of Piatt County; died at his home in Decatur, Ill., June 8, aged 84.

HERBERT S. SPERRY, M. D. College of Physicians and Surgeons, Keokuk, Ia., aged 47; a member of the Illinois State Medical Society; a practitioner and pharmacist of Hull, Ill., and also manager of the Electric Light Plant of Hull; was accidentally electrocuted June 21, by coming in contact with an electric wire of high voltage while attempting to make repairs.

JAMES FULTON MCCUTCHAN, M. D. College of Physicians and Surgeons, Keokuk, Iowa, 1868; a member of the Illinois State Medical Society and president of the Warren County Medical Society; a veteran of the Civil War, and

one of the oldest practitioners of Warren County, died suddenly at his home in Alexis, Ill., May 28, aged 81.

WILLIAM DOUGALL, M. D. Northwestern University Medical School, Chicago, 1868; a Fellow of the American Medical Association; once president and later secretary of the Will County (Ill.) Medical Society; president of the Illinois Pure Aluminum Company, Lemont, and for a time chief surgeon of the Illinois and Michigan Canal; from 1879 to 1883, postmaster of Joliet; a veteran of the Civil War; died at his home in Joliet, May 18, from heart disease, aged 73.

HENRY BAK, M. D., University of Vienna, Austria, 1872; formerly a surgeon in the Austro-Hungarian army and later a surgeon of volunteers during the Spanish-American War; president of the faculty and professor of practice of medicine and pediatrics in the Southern College of Medicine and Surgery, Atlanta, Ga.; for several years a practitioner of Chicago; died in the Michael Reese Hospital in that city, May 25, from carcinoma of the bladder, aged 68.

NEW AND NON-OFFICIAL REMEDIES.

During May the following articles have been accepted by the Council on Pharmacy and Chemistry for inclusion with New and Non-Official Remedies:

Hoffman-LaRoche Chemical Works: Papaverine Hydrochloride, Roche; Papaverine Hydrochloride, Roche, Tablets; Papaverine Sulphate, Roche, Ampules. Hynson, Westcott & Co.: Ouabain Ampules, H. W. & Co.

Merck & Co.: Papaverine Hydrochloride, Merck.

Since publication of New and Non-Official Remedies, 1915, and in addition to those previously reported, the following articles have been accepted by the Council on Pharmacy and Chemistry of the American Medical Association for inclusion with "New and Non-Official Remedies":

Standard Radium Solution for Bathing: A 5.2 per cent barium chloride solution containing radium chloride equivalent to 4.2 micrograms of radium per bottle. For "Actions and Uses" see the article on radium in New and Non-Official Remedies. The barium in the solution is said to have no effect. The contents of a bottle, containing 4.2 microcuries, or 10,000 Mache units, are used for a bath. The Radium Chemical Co., Pittsburgh, Pa. (Jour. A. M. A., April 17, 1915, p. 1325.)

Standard Radium Solution for Drinking: A solution of 2 micrograms of radium and 1.3 mg. barium chloride per bottle of 60 c. c. For "Actions and Uses" see

the article on radium in New and Non-Official Remedies. In view of the small barium content it is claimed that the physiologic action of barium may be ignored. The Radium Chemical Co., Pittsburgh, Pa. (Jour. A. M. A., April 17, 1915, p. 1325.)

Standard Radium Earth: A mixture consisting chiefly of silica and small quantities of carnotite, 450 gm. containing 0.45 micrograms of radium in the form of radium sulphate. For "Actions and Uses" see the article on radium in New and Non-Official Remedies. For use the earth is mixed with water and heated for a time. The Radium Chemical Co., Pittsburgh, Pa. (Jour. A. M. A., April 17, 1915, p. 1325.)

Standard Radium Compress: A compress containing 225 gm. of a mixture consisting chiefly of silica and barium sulphate containing radium sulphate equivalent to 15 micrograms of radium. For "Actions and Uses" see the article in New and Non-Official Remedies on radium. Being applied wet, it is claimed that the action is partly due to beta and gamma radiation of the radium salt and partly to the radium emanation which is dissolved out by the water. The Radium Chemical Co., Pittsburgh, Pa. (Jour. A. M. A., April 17, 1915, p. 1325.)

Papaverine: An alkaloid obtained from opium, but not chemically related to morphine. Its use has been proposed in various atonic conditions of the smooth muscles, particularly in gastric and intestinal spasms, for the diagnosis of pyloric spasm, biliary colic and in bronchial spasm. It is a feeble analgesic and local anesthetic. Neither tolerance nor habituation from its use has been reported. It is used in the form of its salts (see below).

Papaverine Hydrochloride: This contains not less than 88 per cent of papaverine. Papaverine hydrochloride is odorless, bitter and permanent in the air. It is sparingly soluble in water; soluble in alcohol; very soluble in chloroform; insoluble in ether. It is marketed as:

Papaverine Hydrochloride, Merck: Merck & Co., New York.

Papaverine Hydrochloride, Roche: Hoffmann-LaRoche Chemical Works, New York.

Papaverine Hydrochloride, Roche, Tablets: Each tablet contains papaverine hydrochloride 0.04 gm. Hoffmann-LaRoche Chemical Works, New York. (Jour. A. M. A., May 29, 1915, p. 1849.)

Papaverine Sulphate: This contains not less than 85 per cent of papaverine. Papaverine sulphate is odorless, bitter and slightly hygroscopic. It is soluble in water and in alcohol; very soluble in chloroform; insoluble in ether. It is marketed as:

Papaverine Sulphate, Roche, Ampules: Each ampule contains 0.04 gm. papaverine sulphate. Hoffmann-LaRoche Chemical Works, New York. (Jour. A. M. A., May 29, 1915, p. 1849.)



SAVE-THE-BABY WEEK

Chicago, July 17-24, 1915.

The Milk contained in this bottle has been carefully supervised by the Department of Health until it was left at your door . . . Keep every drop of it cold until you prepare it for your baby's stomach . . . Guard it carefully from FLIES and DIRT . . . Assist and advise the Mother of the poor baby in your Neighborhood and transmit your knowledge of sanitation to the end that her baby may be as healthy as yours.

Chicago Department of Health Cut No 295

SAVE-THE-BABY MILK TAG.

This is a reproduction of the tag placed on 500,000 bottles of milk delivered to the homes in Chicago on July 21st and 22nd. If these tags did no more than call the attention of the mothers of Chicago to the need of helping Chicago's babies, they have been worth many times their cost.

"KIDLETS"—Continued.

The stork and the fly are deadly enemies.

If babies are worth while, they should have all they are worth.

Remember that the baby is the helpless member of the family. It cannot speak for itself. It needs the best of care and attention all the time.

—From *The Health Bulletin*.

CHICAGO A HEALTHY CITY.

A comparison of the death rates from principal causes in the nine American cities having populations over 500,000 for the past two years shows that the typhoid death rate has been materially reduced in Chicago, Philadelphia, St. Louis, Cleveland and Detroit; the Chicago rate having dropped from 10.5 to 6.9 per 100,000 population, or over 34 per cent, giving this city the lowest rate recorded by any large city except New York. The Chicago rates also showed decreases in diphtheria, scarlet fever, pneumonia, and diarrheal diseases. The Boston pneumonia rate was reduced. In Cleveland and Detroit the rates were reduced in all the diseases listed, except tuberculosis.

The percentage of deaths under one year of age did not change materially in any city, St. Louis remaining the lowest and Detroit highest.

The St. Louis rate for pneumonia was reduced, but increases are noted in the rates for diph-

theria, scarlet fever, tuberculosis and diarrheal diseases, though the rate for diarrheal disease deaths remained far below that of any other city.

Such a phenomenally low death rate from diarrheal diseases as that of St. Louis in 1913, viz., 17.3 per 100,000, invites analysis. On checking the deaths reported, 125, with the U. S. census report for the same year, it will be noted that the census classified 525 deaths in St. Louis from diarrheal diseases under two years of age. The U. S. census rate for St. Louis would, therefore, be 72.5 per 100,000 population, a rate slightly in excess of the New York rate in 1913. These figures show a radical difference in the classification of deaths.—From *Bulletin, Chicago Department of Health*.

Book Notices

ALVEOLODENTAL PYORRHEA. By Charles C. Bass, M. D., Professor of Experimental Medicine, and Foster M. Johns, M. D., Instructor in the Laboratories of Clinical Medicine at the Tulane University Medical College, New Orleans, La. Octavo volume of 167 pages, with 42 illustrations. Philadelphia and London: W. B. Saunders Company, 1915. Cloth, \$2.50 net.

The author gives in this volume quite an exhaustive treatise of pyorrhea. It is true that dentists treat nearly all cases of pyorrhea, or nearly all cases are left untreated. It is equally true that physicians pay too little attention to the teeth of their patients. Bad teeth or suppurating alveoli cause many cases of infection in other anatomical parts. The author treats

this disease in a scientific way, and incidentally upsets most of our accepted ideas of the care and treatment of teeth. We recommend that both doctors and dentists read this book, and we would call especial attention to the chapter on prophylaxis.

THE MEDICAL CLINICS OF CHICAGO. July, 1915. Volume I No. 1. Published Bi-Monthly by W. B. Saunders Company, Philadelphia and London. Price per year, paper, \$8.00, cloth, \$12.00.

The W. B. Saunders Company have issued the first volume of the Medical Clinics of Chicago. The clinics are those of teachers of internal medicine. The clinics of this issue, together with the subject of each, are as follows:

Clinic of Dr. Charles L. Mix,

Lung Abscess with the Picture of Tuberculosis.

A Lesion of the Cauda Equina.

Clinic of Dr. Charles Spencer Williamson,
Nephritis.

Case of Hepatic Abscess.

Gout.

Clinic of Dr. Isaac A. Abt,

Infantile Tuberculosis.

Sarcoma of Kidney in a Child Eighteen Months Old.

Clinic of Dr. Robert B. Preble,

Chronic Lymphatic Leukemia.

Renal and Cardiac Insufficiency.

Clinic of Dr. Maurice L. Goodkind,

Pneumonia.

Tabes.

Cholelithiasis.

Foreign Body in the Bronchus Six Months.

Clinic of Dr. Frederick Tice,

Syphilitic Aortitis.

Hour-Glass Stomach.

Clinic of Dr. Walter Hamburger,

Congenital Pulmonary Stenosis.

Aneurysm of the Arch of the Aorta.

Clinic of Dr. Ralph C. Hamill,

Syphilis of the Central Nervous System.

These clinics will be of great value to medical literature, if the high standard is maintained.

THE CLINICS OF JOHN B. MURPHY, M. D., at Mercy Hospital, Chicago. Volume IV, No. 3. (June, 1915.) Octavo of 195 pages, 73 illustrations. Philadelphia and London. W. B. Saunders Company, 1915. Published Bi-Monthly. Price per year. Paper, \$8.00. Cloth, \$12.00.

This number of Murphy's Clinics contains an extensive talk on the diagnosis of injuries of the carpers, illustrated with numerous x-ray pictures. Illustrations of methods of testing these injuries are also included, and are very good. A talk on appendicitis giving the excessive high mortality as a reason is timely. Dr. William J. Mayo is represented by a clinical talk on unsuccessful gastro-interostomy for ulcer, giving an analysis of its causes. The balance of this number is not overshadowed by the above articles, and included articles on friction burns, tumor of testicle, painful heel, tuberculosis of cord and epididymitis, tenovaginitis, myeloid sarcoma and hypernephroma.

SIMPLIFIED INFANT FEEDING, WITH SEVENTY-FIVE ILLUSTRATIVE CASES. By Roger H. Dennett, S. B., M. D. Adjunct Professor of Diseases of Children; New York Post-Graduate Medical School; Attending Physician of the Childrens Department, New York Post-Graduate Hospital; Assistant Attending Physician at the Willard Parker Hospital and the Red Cross Hospital, New York. With 14 illustrations. Philadelphia and London. J. B. Lippincott Company. Price, \$3.00.

An interesting work on simplified infant feeding following a certain set of methods or systems, which according to the author have been extensively tried out, and which have produced excellent results. He describes in detail just how to feed an infant, giving his methods in an easily comprehensible manner. The book should be of great assistance to those who have difficulty in prescribing diet for infants. The chapters devoted to the treatment of diarrhoea constipation, vomiting, in bottle-fed babies are exceptionally good.

THE TREATMENT OF FRACTURES. With Notes Upon a Few Common Dislocations. By Charles L. Scudder, M. D., Surgeon to the Massachusetts General Hospital; Associate in Surgery at the Harvard Medical School. Eighth Edition, Revised and Enlarged. Octavo volume of 734 pages, with 1,057 original illustrations. Philadelphia and London: W. B. Saunders Company, 1915. Polished Buckram, \$6.00 net; Half Morocco, \$7.50 net.

A comparison with the last edition of Scudder shows numerous changes and additions which have greatly enhanced the value of the present edition. The illustrations have been greatly added to, likewise the methods of treatment that have been proven satisfactory. The articles on fracture of the jaws, the acetabulum, the greater tuberosity of the humerus and the separation of the lower epiphysis of the femur have had much new material added. A timely warning against operative treatment is given, where definite indications are not present. It can be recommended as being the last word in fractures. The printing and illustrations are excellent.

MODERN ASPECTS OF THE CIRCULATION IN HEALTH AND DISEASE. By Carl J. Wiggers, M. D., Assistant Professor of Physiology in Cornell University Medical College. Octavo, 378 pages, illustrated with 104 engravings. Cloth, \$3.75 net. Lea & Febiger, Publishers, Philadelphia and New York, 1915.

This excellent and timely volume contains, in a convenient form, many of the investigations of Professor Wiggers on the circulation. A great deal of it has not heretofore been published, and increases our knowledge of the circulation considerably. The book is divided into three sections, section one being devoted to the physiology of the circulation, section two, graphic methods for the clinician, section three, disease of circulation. Section two contains practically all the methods for the complete study of the heart and pulses, and is graphically presented. It is a book that should prove valuable to the physician who is especially interested in the circulation.

The illustrations are numerous, well made and

clearly explained. The mechanical features of the book are excellent.

DIARRHOEAL, INFLAMMATORY, OBSTRUCTIVE AND PARASITIC DISEASES OF THE GASTRO-INTESTINAL TRACT. By Samuel G. Gant, M. D., LL.D., Professor of Diseases of the Colon, Sigmoid Flexure, Rectum and Anus at the New York Post-Graduate Medical School and Hospital. Octavo of 604 pages, 181 illustrations. Philadelphia and London: W. B. Saunders Company, 1915. Cloth, \$6.00 net; Half Morocco, \$7.50 net.

A perusal of this apparently large volume on the treatment of diarrhoea, which with many is bismuth, explains the reason why many cases of diarrhoea are really not treated. The author has presented his subject in a most interesting style, and has endeavored to free his book of useless matter, and easily comprehensible. Technical terms, confusing nomenclature, profuse histological data, complicated laboratory methods, prolonged discussions, statistics and obsolete views have been wisely omitted. Exceptionally good are the chapters on examination and diagnosis, on the parasitic causes of diarrhoea and the irrigating and surgical treatment. A useful formulary is included. The book carries the stamp of a great amount of personal work by the author, and should be a great aid to the practitioners in the treatment of this oftentimes troublesome and more times mistreated condition, containing as it does all the possible causes of diarrhoea and its methods of successful treatment.

THE TREATMENT OF GONORRHEA AND ITS COMPLICATIONS IN MEN AND WOMEN. For the General Practitioner. By William J. Robinson, M. D. Chief of the Department of Genito-Urinary Diseases and Dermatology, Bronx Hospital and Dispensary; Editor the American Journal of Urology, Venereal and Sexual Diseases; Editor of the Critic and Guide; Author of Treatment of Sexual Impotence and Other Sexual Disorders in Men and Women; Sexual Problems of Today; Never Told Tales; Practical Eugenics, etc. President of the American Society of Medical Sociology, Ex-President of the Berlin Anglo-American Medical Society, Fellow of the New York Academy of Medicine; Member of American Medical Editors' Association, American Medical Association, New York State Medical Society, International Gesellschaft für Sexualforschung, American Urological Association, etc., etc. Price, \$2.50. 1915. Critic and Guide Company, 12 Mt. Morris Park West, New York.

We are pleased to read a book written by a specialist, which does not emphasize the opinion that the only person competent to treat a particular disease is the specialist.

Dr. Robinson has written a book aimed to be of benefit to the general practitioner, and with the idea that the general practitioner may have ability sufficient to properly treat a patient suffering from a disease in which the doctor specializes.

The volume is not a collection of opinion from other text books, but hands down first-hand the author's opinions and results of treatment, as used by him.

The author discusses the many complications which may arise in this disease in either sex, and the conditions from which they come, giving his method of treatment. The doctor also gives much attention to

treatment, frequently given, but which in his opinion, should not be used.

The book is written in a plain, easily readable language and gives attention to the minute detail of treatment, which is so necessary in treatment of any disease, but which is so often neglected. We are pleased to recommend the book to our readers.

APPLIED IMMUNOLOGY. The Practical Application of Sera and Bacterins, Prophylactically, Diagnostically and Therapeutically With an Appendix on Serum Treatment of Hemorrhage, Organotherapy. By B. A. Thomas, A. M., M. D., Professor of Genito-Urinary Surgery in Polyclinic Hospital and College for Graduates in Medicine; Instructor in Surgery in the University of Pennsylvania; Associate in the William Pepper Laboratory of Clinical Medicine. And R. H. Ivy, M. D., D. D. S., Assistant Instructor in Surgery in the University of Pennsylvania; Instructor in Genito-Urinary Surgery in the Polyclinic Hospital and College for Graduates in Medicine, Philadelphia. Five Colored Inserts and 68 Illustrations in Text. Philadelphia and London. J. B. Lippincott Company. Price, \$4.00.

The most practical work on immunology we have seen. The book is written principally for the student and practitioner, and gives in a concise manner the present day knowledge and practical appliance of that knowledge of immunization.

It has avoided much of the experimental and theoretical, which has served to confuse the student of Serology. The book gives in detail the practical phases of Serum and Bacterin applications in medicine, and will be of most value to those physicians who are using sera and vaccines, yet have not the time to delve deeply into the scientific production of them.

OPERATIVE GYNECOLOGY. By Harry Sturgeon Crossen, M. D., F. A. C. S., Associate in Gynecology, Washington University Medical School, and Associate Gynecologist to the Barnes Hospital; Gynecologist to St. Luke's Hospital, Missouri Baptist Sanitarium and St. Louis Mullanphy Hospital; Fellow of the American Gynecological Society, and of the American Association of Obstetricians and Gynecologists. Seven Hundred and Seventy Illustrations. St. Louis. C. V. Mosby Company. 1915. Price, \$7.50.

Just from the press of the C. V. Mosby Company comes this new work on Operative Gynecology. The author has limited the text to strictly operative procedures on the female genital tract, excluding all operations on adjacent organs. Dr. Crossen emphasizes the fact that one particular method of operation will not be successful in all cases, that an operator should choose the particular method for each individual case. Selective treatment is the keynote of the work. He describes and illustrates in detail a number of his favorite methods for each operation. The text is clear, concise, and easily readable. One must compliment the author on the very excellent illustrations.

The book is one which will prove of immense value to the younger operators, and should be read by those operators who persistently adhere to one particular operation for the same disease in all patients. We recommend the work to our readers.

ILLINOIS MEDICAL JOURNAL

THE OFFICIAL ORGAN OF
THE ILLINOIS STATE MEDICAL SOCIETY

VOL. XXVIII

CHICAGO, ILL., SEPTEMBER, 1915

No. 3

Original Articles

CLINICAL PROBLEMS IN CONNECTION WITH SOME OF THE COMPLICATIONS OF ACUTE OTITIS MEDIA.*

GEORGE E. SHAMBAUGH, M. D.,
CHICAGO.

The serious intra-cranial complications of acute otitis media, including sinus thrombosis and meningitis, develop usually as a sequel to mastoid involvement. In most cases these complications follow on the formation of a distinct mastoid abscess, that is, an abscess cavity formed by the softening of the mastoid bone. In some cases the complications develop without any distinct evidence of softening in the mastoid.

In the diagnosis of an acute mastoid abscess two clinical facts must always be kept in mind: first, that a mastoid involvement, with symptoms over the mastoid process, is very often present in cases where no mastoid abscess has developed; second, that a mastoid abscess, with extensive softening of the bone, often develops without any evidence of trouble over the mastoid region. Mastoiditis with marked symptoms is a frequent complication of an acute otitis media, but the development of a mastoid abscess requiring surgical interference is by no means so common. It is clear, therefore, that in deciding whether a particular case requires a mastoid operation it will be necessary often to make a very careful study of the case. We sometimes hear of mastoiditis being operated on within a day or two after the onset of an otitis media. Such a procedure is usually a mistake, since the most of these cases will recover without an operation and in the absence of symptoms indicating an intracranial complication such cases should usually be kept under observation until the diagnosis of

an abscess formation can be reasonably assured before an operation is advised.

In studying cases of acute mastoiditis the following facts should be kept in mind: Mastoid symptoms—redness, tenderness and even swelling over the process, developing in the early stages of an acute otitis media, that is before the rupture of the drum membrane, are very often observed, but they usually disappear promptly when the drainage of the tympanum has been established. The persistence of these symptoms, however, with no evidence of abatement, for several days after the drum membrane has been opened and rational treatment instituted, points strongly to the development of a mastoid abscess. The appearance of mastoid symptoms in the course of an acute otitis media after the ear has begun to discharge freely must be regarded with much greater suspicion than when these same symptoms develop before the opening of the drum membrane has taken place.

The persistence of even mild mastoid symptoms for several weeks after the ear has begun to drain freely is more significant than the presence of much more violent mastoid symptoms at the onset of an otitis media.

A complete absence of symptoms over the mastoid, even of tenderness on firm pressure, is possible in cases where an extensive abscess cavity has developed in the mastoid process. The reason is that in adults it is not uncommon for the outer shell of the mastoid to be very thick and firm, preventing any surface symptoms from a deep-seated abscess cavity. In these cases the diagnosis of a mastoid abscess can often be made from an examination of the external canal. The persistence of a profuse discharge for three or four weeks, with no evidence of abatement, should always be regarded with suspicion, provided the character of the discharge is distinctly purulent and not the more usual muco-purulent character. The development of a contraction in the fundus of the canal, and especially of a sagging of the

*Read at the sixty-fifth annual meeting of the Illinois State Medical Society, at Springfield, May, 1915.

upper posterior wall of the canal, has the same significance as the occurrence of an edematous swelling over the outer surface of the mastoid process.

The development of a mastoid abscess with destruction of the bone often bears a direct relation to the length of time allowed to elapse before the drainage of the ear is established. The symptom of pain is usually present to direct attention to the abscess in the middle ear, but it is not uncommon for pain to be absent while the undrained middle ear abscess is proceeding to the formation of a mastoid abscess. The failure to relieve a middle ear abscess is more likely to occur in children, who often will make no complaint unless the discomfort in the ear is quite marked. On the other hand, in adults the absence of pain in the ear not infrequently leads to the failure to have the ear examined and the drainage established before a mastoid softening has already begun. I have seen two such cases in adults recently, where, in the absence of pain, the sense of fullness and deafness in the ear was allowed to persist for more than a week before having the ear treated. In both cases a middle ear abscess was found, with an unruptured drum membrane and in both cases a mastoid abscess had later to be opened.

Transillumination of the mastoid in the cases of acute otitis media is often of distinct assistance in showing whether the mastoid cells are filled with pus, but it is of little value in making the much more important diagnosis between mastoiditis which can go on to spontaneous recovery, and the existence of a mastoid abscess which requires surgical aid. The x-ray plate may be of more assistance in making this diagnosis than the transillumination test. In a well-developed pneumatic mastoid process the roentgenogram will show distinctly when the cells are filled with pus and in some cases will give the much more important data of a breaking down of the bone and the formation of an abscess cavity.

Another perplexing problem that occasionally arises in the case of acute mastoid abscess is the persistence of trouble after the mastoid has been operated on. The trouble in these cases arises from the extension of the infection beyond the confines of the mastoid process, which accounts for the failure at the first operation to reach the infected area after a careful and painstaking effort has been made to perform a complete exten-

teration of the diseased process. In cases where the primary operation has been carefully done the focus which persists in causing trouble will be found around the upper part of the mastoid, since the removal of the mastoid tip is now a part of every complete mastoid operation.

The most frequent location for the extension of disease beyond the confines of the mastoid process is at the upper posterior angle. In some of these cases the trouble lies in an extension of infection much further forward into the root of the zygoma above and in front of the external meatus.

The recognition and proper treatment of thrombosis of the lateral sinus is of great importance, since this is the most frequent serious complication of acute otitis media. The clinical symptom of marked remission in the temperature is so characteristic that the diagnosis can often be made from this symptom alone when it occurs in connection with acute otitis media. Sinus thrombosis occurs quite frequently when there has been no evidence of a mastoid abscess or any clinical symptom of a mastoiditis. I have seen cases of sinus thrombosis where the evidence of an otitis media was limited to a slight congestion of the drum membrane. When exploring the lateral sinus in cases of suspected thrombosis and where there has been no mastoid abscess, a small peri-sinus collection of pus is occasionally found. In some of these cases the sinus may not be thrombosed at all and the case will go on to recovery after the pocket of pus has been drained. It is a good rule to aspirate the sinus in such cases and if blood is found to defer opening the sinus. If the sinus is found to be thrombosed it should be opened and if there is evidence of disintegration of the thrombus the removal of the thrombus should not be undertaken until the jugular vein has been ligated. The ligation of the jugular need not be undertaken in cases where a solid thrombus is found, with no evidence of softening. In these cases the sinus should be very freely exposed and opened in order to secure free drainage, but the removal of the entire clot is hardly advisable. On the other hand, when a septic broken-down thrombus is discovered it is usually best to secure a complete removal of the thrombus and free bleeding, especially from the upper end.

Note: Discussion of this and following papers on p. 217 et seq.

SYMPATHETIC OPHTHALMIA WITH REPORT OF CASE.*

ROBERT BLUE, M. D.,
CHICAGO.

It is not my purpose to bring you anything new on the subject for which I have been announced. It is rather my purpose to reiterate old truths on a subject which is perennial because of its clinical interest and to lay a basis for discussion on a subject with which all have had more or less practical experience.

The mere mention of sympathetic ophthalmia brings before our minds a clinical picture. The picture is that of a post-traumatic irido-cyclitis following an injury, puncture or rupture of the tunica fibrosa causing a similar iridocyclitis in the fellow eye. The fact that a perforating serpiginous ulcer or a subconjunctival rupture of the sclera or a necrotic sarcomata may cause a sympathetic ophthalmia does not obtrude itself until we endeavor to explain the etiology of this disease.

The time limit within which the inflammation may manifest itself in the second, sympathizing or sympathogenic eye is according to clinical observation ten days to forty years. Practically we may consider the danger to exist from time of injury throughout remaining life. The maximum danger exists during the time when the iridocyclitis in the primary or injured eye is at its height vs. fourth to eighth week after injury.

The inflammation in the second eye is usually preceded by signs of sympathetic irritation,—photophobia, lachrymation, pain, weakness of accommodation,—which usually disappear once and forever when the primarily affected eye is removed.

When objective signs of inflammation are present in the second eye, whether added to or whether they make their appearance without the intervention of signs of sympathetic irritation, we consider sympathetic ophthalmia to be established.

What are these determining signs? In the beginning we may note the faintest blush upon the sclera in the immediate vicinity of the cornea indicative of a beginning engorgement of the circumcorneal vascular loops; Decemet's membrane is always sprinkled thickly or sparsely with fine

deposits; there may be a few posterior synechiae, fine opacities may be detected in the vitreous and it is sometimes possible to distinguish an increased redness of the retina and optic nerve denoting a hyperemia of these structures.

Later the most intense signs of inflammation may prevail—pupillary membrane, annular or total posterior synechia with increase of tension, cyclitic membrane, softening, atrophy.

This is the picture which the appellation sympathetic ophthalmia brings before us.

But this picture is incomplete. Since 1905 we have been compelled to give this picture a pathological setting. The term sympathetic ophthalmia must now bring before us a clinical picture with an anatomical background.

I use an arbitrary date—1915—for in that year Fuchs published a paper in which he announced the conclusions that sympathetic ophthalmia was due to an iridocyclitis presenting a characteristic anatomical picture—a picture allowing it to be differentiated from other forms of chronic uveitis. The distinguishing characteristic of eyes capable of producing sympathetic ophthalmia is an infiltration of a peculiar kind of the uveal tissue itself, in contradistinction to an exudation on the free or vitreous surface of the coats of the eye characteristic of the ordinary forms of infection. He further concluded that the exudate regularly found on the free surface of the first eye did not belong to the picture of sympathetic ophthalmia but was the result of a mixed infection.

As described by Fuchs this characteristic infiltration consists of the accumulation of unicellular leucocytes—lymphocytes—in the iris, ciliary body and chorioid. Early in the process this infiltration may be confined to limited areas, later the whole uvea is usually diffusely infiltrated and greatly thickened. In this infiltrated area are usually found local collections of epithelioid cells and giant cells are present in about half the cases. When giant cells are found lying between the epithelioid cells in these focal collections, nodules are formed bearing a close resemblance to tuberculoma. Indeed so close is this resemblance that Rippert when shown a specimen from sympathetic ophthalmia by Reis pronounced it tuberculosis.

This peculiar infiltration shows a marked tendency to spare the chorio-capillaris and is usually

*Read at the sixty-fifth annual meeting of the Illinois State Medical Society, at Springfield, May, 1915.

confined to the uvea, though the sclera may be invaded and its substance permeated with the scattered nodules. Extra ocular proliferation also occurs, the path of exit usually being along the chorioidal vessels.

This is the anatomical picture of sympathetic ophthalmia as described by Fuchs to which reference is made throughout the literature. I have already in this paper given him credit for the picture, knowing full well that all the pathological elements of it had been observed by previous authors and that previous to 1903 Schirmer upheld a specific anatomical picture in sympathetic ophthalmia.

Why then should credit be given to Professor Fuchs? Because he maintained that the clinical entity known as sympathetic ophthalmia depended upon a definite, recognizable pathological picture which permitted us to say of an enucleated injured eye—this eye produced or was surely capable of producing the clinical condition universally recognized as sympathetic ophthalmia and because he demonstrated by an unprecedented clinical test the correctness of this proposition.

True, acceptance of this proposition is not universal, legitimate grounds for negation exist, but those not accepting it are few and acceptance is refused more from theoretical than from clinical considerations. I venture to prognosticate that the proposition will be generally accepted on its face value until the etiology of sympathetic ophthalmia is definitely established.

In the test referred to, some 200 eyes were selected which had been enucleated during the previous 20 years for conditions which eventually might have produced sympathetic ophthalmia. The eyeballs selected included injuries, operations followed by inflammation, corneal ulcers with perforation and consequent iridocyclitis. Of 200 eyes thus selected, thirty-five showed a picture in common. Reference to histories showed that sympathetic ophthalmia had actually existed in the other eye in thirty-four of the thirty-five eyeballs selected.

In view of our present ignorance on many points regarding sympathetic ophthalmia such a clinical demonstration of a probable anatomical basis for the condition is of immense practical value whether accepted as proof of the fact or as only furnishing a working hypothesis.

Shortly after Fuchs published his paper re-

viewing the facts recorded above, Kitamura repeated a like experiment on a larger scale at the Breslau eye clinic and affirmed Fuchs' statements in toto.

The tendency of subsequent opinion is rather favorable to the contention that there is a specific type of infiltration preceding the condition sympathetic ophthalmia.

In as much, however, as the question cannot be regarded as definitely settled any well authenticated case may be of value to those striving for the solution of the problem as adding weight to one opinion or the other.

I may be pardoned, therefore, for here reporting a case of Dr. G. T. Jordan's bearing on the subject, the clinical course of which I was privileged to observe throughout and the pathological examination of which was intrusted to me.

Briefly the clinical history of the case is as follows:

Case of A. C.: Aged 38 years. June 6, 1912, while pounding a bolt with a hammer a piece of metal flew into the right eye. Patient was first seen within two hours after injury. Examination of injured right eye showed a wound extending horizontally across the cornea on a line corresponding with the junction of the upper third with the lower two-thirds. Hemorrhage, probably from the iris, had partially filled the anterior chamber with blood. The foreign body lodged in the vitreous cavity, penetrating the iris and leaving the lens partially opaque because of traumatism. A ragged tear in the iris above marked the line of penetration. View into the interior of the eye was blocked by the hemorrhage into the anterior chamber and opacity of the lens.

A piece of metal one-fourth by one-fifth of an inch was removed from the vitreous cavity by means of the magnet after enlarging the wound in the cornea a trifle. The delivery of the foreign body was attended by escape of vitreous and by additional hemorrhage.

The vision in the injured right eye before operation was reduced to light perception. After operation it was not perceptibly lessened. The vision in the uninjured left eye was 6/7.5.

He was under continuous treatment from Nov. 6, 1912, to Jan. 3, 1913, i. e. for a period of two months, at the end of which time the injured eye was quiet and apparently cured. The vision was as above recorded—O. D. light perception, O. S. 6/7.5.

During the following summer and autumn he was seen at irregular intervals. During all these months neither eye showed any signs of inflammatory reaction.

December 15, 1913, i. e., 18 months and 9 days after receiving the initial injury in the right eye, he presented himself with the signs and symptoms of an

acute iridocyclitis in the left eye. He gave a history of the eye becoming sore and inflamed five days previous. The onset was sudden, the pain had been considerable and the vision had become increasingly dim.

He was immediately placed in Wesley Hospital and on December 16, 1913, the right eye was enucleated on the assumption that the condition was one of sympathetic ophthalmia and on the further assumption that the removal of the primary eye would favorably influence the process in the second eye. In the hope that the process might be still further influenced he was given sodium salicylate during his stay in the hospital, viz., to Dec. 24, 1913. Atropin was used locally uninterruptedly and dionin to some extent. After leaving the hospital he was under continuous observation and treatment until July 22, 1914, or a period of seven months.

During this period the eye gradually quieted down but for some months was irritable. There would be days when the eye would feel uncomfortable and lachrymation would be free, causing its host some anxiety. Examination, in addition to the permanent changes to be described, would show mild engorgement of the circumcorneal loops of vessels.

Finally in July, the eye became entirely quiet—quiet but permanently damaged. Vision had been reduced from 6/7.5 to 6/30. With the aid of lenses (plus 50 combined with plus 50 ax. 90) the vision could be raised to 6/15ths. With plus 2.25 added for near J.3 could be read and newspaper print became legible. The explanation of this marked diminution in vision is to be found in the presence of a pupillary membrane.

Since then so far as vision goes, the eye has remained stationary. I will, therefore, describe its clinical characteristics as they appeared on Feb. 11, 1915, i. e., 37 months and 5 days after the initial injury to the right eye and 13 months and 26 days after first coming under observation with a fully developed case of sympathetic ophthalmia in the left eye.

On this date the eye appeared entirely quiet. The scleral conjunctiva is clear and there is no circumcorneal injection. Decemet's membrane is liberally sprinkled with pin point deposits of exudate. This sprinkling covers the posterior surface of the cornea throughout the greater part of its extent. Beginning on a level with the upper border of the pupil, it covers the inferior portion of the cornea quite uniformly, though the deposits are heavier below than above. Between the deposits the cornea is clear. The normal markings of the iris are clear and distinct. The pupil reacts but posterior synechiae interfere with the movement of the iris at a broad point above and at a point below in the nasal half. There is a broad, irregular band of pigment deposited on the lens capsule just inside the nasal and inferior borders of the pupil. The entire pupil is filled with a pupillary membrane. This membrane is thickest at the nasal border of the pupil where it forms a white crescent; toward the temporal border it thins out into a gray haze. Under atropine

the pupil dilates in the temporal half. The nasal half dilates very irregularly and very little at that. There is a broad synechia above and another below and between these two there are several smaller synechiae so that in the nasal half of the pupil the annular synechia is all but complete.

The ophthalmoscope adds nothing to our picture for because of the pupillary membrane all details of the fundus are veiled.

Two and one-half months later, i. e. April 24, 1915, this picture remained the same with the important exception that the deposits on Decemet's membrane had been resorbed.

That the picture in the left eye was an iridocyclitis none can question, but was it an iridocyclitis sympathetica? The possibility of the original focus of infection lying elsewhere in the body than in the right eye remained even after its enucleation for there is no reason why a man might not suffer from an iridocyclitis traumatica in one eye and later from a luetic iridocyclitis in the second eye.

To rule out any such possibility the man was examined thoroughly by an internist and no physical defect was found which could be considered as causative and the Wassermann was negative.

Clinically then we are justified in making the diagnosis sympathetic ophthalmia.

What pathology does the enucleated eye show? I will not weary you with a technical description of the enucleated eye or of its sections. I will simply enumerate the findings bearing on the topic under discussion and then show you the sections.

The changes of interest in this discussion lie in the uveal tract. Here we find an infiltration of the uveal tissues with uninuclear leucocytes. This is most marked in the ciliary region. The chorioid in the posterior division of the eye is comparatively free, the infiltration here being limited to small scattered nodes. The iris shows a similar nodular infiltration.

In the ciliary region the extensive infiltrate flattens somewhat the ciliary muscles. There is a limited infiltration into the muscle itself, but the striking infiltration lies central to the muscle and greatly thickens this region. Some of the sections show the pigmented layer of epithelium separated from the non-pigmented layer by infiltrate several layers (6 to 12) of cells thick. At some points the infiltrate has broken through the epithelium completely.

This infiltrate represents a multiplication of the fixed cells and an influx of wandering cells. Its greater bulk is composed of small lymphocytes and of plasma cells. The plasma cells are abundant and in many fields predominate over the more numerous lymphocytes; especially is this true of the region bordering on the epithelium. In the sections stained by Pappenheim's method these two types of cells are thrown in certain contrast.

Epithelioid cells can be detected with the oil immersion in all the sections studied. In many of them nests of epithelioid cells can be seen with low power.

A few cells are seen apparently undergoing division.

Giant cells are few. Those seen are of the Langerhans type. No micro-organisms are observed.

In addition to this infiltrative or proliferative uveitis there is an exudative uveitis of a fibrinoplastic type. The exudate is limited almost exclusively to the anterior half of the eye. It is most abundant in the immediate vicinity of the ciliary processes. There is some in the posterior chamber and some in the anterior chamber. The cellular content of this exudate is predominately round cells, though polymorphonuclear leucocytes are occasionally seen.

We note further that the chorioid is everywhere in situ; a small space, no doubt an artefact, separates the retina from the chorioid from the optic nerve to the ora serata. The retina shows no evidence of inflammation. The optic nerve is normal.

There remains to be mentioned one point of great clinical interest. During the sectioning of the eye the microtome knife was felt to grate against a harder substance than it should. Suspicion was immediately aroused that the steel had not been completely removed at the time of operation or that rust, which is not attracted by the magnet, had remained behind. The block was x-rayed and the roentgenogram showed a spicule of rust in the interior of the eye.

The question which immediately arises, but which cannot be answered is, would the sympathetic ophthalmia have developed had the rust been removed at the time of the primary operation?

To recapitulate briefly: We here have a case of sympathetic ophthalmia which clinically conforms to the classical picture of this condition

and which pathologically shows a type of uveitis which accumulating evidence tends to show is part and parcel of a composite picture.

25 E. Washington St.

NON-SUPPURATIVE SINUS DISEASE IN RELATION TO THE EYE.*

JOHN A. CAVANAUGH, M. D.,
CHICAGO.

In the past few years much has been learned regarding the sinuses and their relation to diseases of the eye; but until recently the importance of sinus disease has not received its just recognition. Such men as Uffenrode, Skillen and Brawley have done much to awaken ophthalmologists and rhinologists to this significant association, and the good work is being carried on by competent observers the world over, but much remains to be done.

It is not infrequent that one finds the ophthalmologist treating ocular symptoms which are due to some one or group of sinuses that surround the orbit, therefore, the importance of the co-operation of the ophthalmologist and rhinologist. All should be masters of the anatomical relations of the nasal sinuses to the orbit, and such knowledge can be gained only by study on the cadaver. Time will not permit my taking up the anatomical study of the relation of these areas, and if I did I believe nothing could be added to the information already given by Loeb, Sluder, Onodi and others. Orbital symptoms are most often due to disease of the frontal, ethmoid labyrinth and sphenoid, and the antrum of Highmore occasionally.

We have two forms of non-suppurative sinus disease, the acute and chronic. The chronic form we may divide into the vacuum, chronic inflammatory type and the non-inflammatory type seen in the malignant and non-malignant disease. We will consider only the vacuum and chronic inflammatory types of the disease.

Heredity and congenital conditions may play some part in sinus disease, by the individual having inherited the small family nose; or congenitally by some malformation which interferes with proper aeration and drainage. In my observations the male sex are most often affected. Most

*Read at the sixty-fifth annual meeting of the Illinois State Medical Society, at Springfield, May, 1915.

cases are seen during middle life; however, a careful observer will sometimes find diseased sinuses in children. Occupation has some influence on sinus disease, especially with persons working in high degree of heat, in cold storage houses, dusty places, and those employed in handling certain chemicals which irritate the mucous membrane.

Any and all diseases such as anemia, diabetes, syphilis, tuberculosis, etc., will interfere with proper metabolism, which in turn will effect the mucous membrane, for as soon as proper material fails to be livered to the epithelium of the nose a change takes place in the tissues. This new made compound causes an irritation, congestion, tissue changes and obstruction to drainage. The importance of a systemic disease as a cause of sinus involvement has been impressed upon me recently by a case with a history of considerable post-nasal discharge of a clear mucous character. The patient was being treated for diabetes, having had about 1 per cent. sugar. A diet list was provided by his family physician, and after close adherence to it the post-nasal secretion ceased. As soon as he became careless with his diet the nasal condition returned.

Inhabitants of cities are more subject to sinus disease because of being housed; the dry temperature to which they are exposed has its deleterious effect upon the nasal mucous membrane. Trauma too has its effect by causing a change in the normal pathway of the air, and interference with proper drainage. Infectious fevers also involve the sinuses of the nose. The various micro-organisms play an important rôle in sinus disease and according to Hajek they appear as follows in the relative frequency as the cause of sinus disease: Influenza bacillus, diplococcus pneumonia, staphylococcus pyogenes aureus and albus, streptococcus pyogenes, bacillus coli, pseudo diphtheria bacillus, bacillus pyocyaneus, bacillus friedlander and meningococcus intercellularis. The commonest of these being the staphylococcus and streptococcus. The portal of entry of these organisms is through the air current. Dr. D. B. Kyle tells us the primary invasion of the sinuses is very rare.

To possess a thorough knowledge of the various pathological changes of the mucous membrane of the sinuses one should know the histology of the lining membrane, so permit me to mention it

briefly. The mucous membranes of all the sinuses are similar except that lining the ethmoid labyrinth, which is thinner. The epithelial covering is of the ciliated variety, similar to that found in the respiratory part of the nose. The subepithelial layer contains the blood-vessels and glands, and is so intimately connected with the periosteum one cannot find a dividing line.

The changes which take place in the mucous membrane of these cavities depend as Skillern tells us upon a number of conditions; the length of time the disease has progressed; virulence of germ or germs; the resisting powers toward the disease, and the favorable or unfavorable drainage conditions.

The non-suppurative type of disease is found but rarely in the antrum, frontal and sphenoidal sinuses owing to their poor system of drainage.

I believe most of the cases of the suppurative form of sinus disease, follow on the train of an acute infection; while in the chronic type there is a slow process of irritation going on, due to some one of the above causes, with a gradual congestion edema and round cell infiltration of the subepithelial spaces, which obstruct the normal openings. As time goes on and the issue changes are great enough to obstruct the normal ostia, there is an absorption of the oxygen and a vacuum occurs in the cavity or cavities obstructed. Owing to the changes which have already taken place, this vacuum form of irritation, increasing congestion and swelling, interferes with nutrition and an atrophy results which accounts for the absence of secretion.

We see the non-suppurative type of disease most often in the involvement of the ethmoid labyrinth. Dr. Otto Freer divides them into two forms, the superficial hyperplastic ethmoiditis, and the deep-seated hyperplastic ethmoiditis. The former he considers most common and its main feature is a polypoid hyperplasia of the mucous membrane over the middle turbinate and middle meatus around the hiatus semilunaris, the bony part being little if any involved. The latter form involving the ethmoid bone to varying degrees.

Dr. Jos. Beck, in the *Annals of Otology, Rhinology and Laryngology*, December, 1913, tells us he examined 140 histological specimens, especially in asthmatic cases, in which he finds bone changes are quite uniform, showing large areas of rare-

faction, while the tissue covering the bone shows pathologically considerable variation. There was in the non-suppurative sinusitis the marked absence of inflammatory elements, as round cell infiltration and the presence of inflammatory edema or myxomatous degeneration with loss of the glandular structures, and pathological characteristics of both suppurative and non-suppurative form are frequently met in the same case.

There is no one point in which rhinologists are so at variance, as they seem to be, regarding the formation of polyps, and time would not permit me to quote many authors' ideas on this subject. I believe, however, that polypi are due to the interference of the vascular system of a certain area, which is most often effected by bony changes in the ethmoid labyrinth.

To my mind the symptoms of this type of disease vary with the temperament of the individual, for in some cases we find but little change in the nose, yet the person complains of many symptoms; in other cases marked pathological disturbances will be present, while the patient will say he has absolutely no nasal disturbances, and will complain only of his throat, eyes or ears, which are secondary to the nasal condition. It has been my experience to find the non-suppurative form of sinus trouble more often in persons of a neurotic tendency.

The subjective symptom most often complained of is a severe headache, the location of which may vary, depending upon the sinus or sinuses involved. Pain due to the ethmoids usually occurs between the eyes or at the occiput; pain due to the frontal, usually occurs over the sinus involved or in the temple; pain due to the sphenoid, usually occurs at the occipital region, or top of the head; and pain due to the antrum usually occurs over the eye of the side involved, or in the temples. These headaches are so severe in some cases, that if one is not familiar with sinus conditions, he is liable to advise, and do, a resection of a nerve; such a procedure was followed in a case reported by Dr. P. Marquis. A frontal vacuum case which came under my observation last year, complained of very severe pains over the right side of the head, usually most severe when he arose in the morning, lasting variable lengths of time, but he was never quite free from them. When he stooped or stepped down from an incline the pain was more intense. On

awakening in the morning he had great difficulty in opening his eye lids; it was necessary to bathe them in cold water for a half hour, afterwards the light was annoying for a considerable length of time; there was no trouble for the remainder of the day except a feeling of pressure that gave discomfort. The eye ball seemed sensitive to the touch. There was no temperature, no secretion to be found at any time, and the patient said his nose was dry. Blood count was made and found normal. An x-ray of the sinuses was taken and a shadow of the right frontal was shown. Application of cocaine to the nose gave him considerable relief, but the application of adrenaline chloride had absolutely no effect without the cocaine. I inflected the middle turbinate, curetted out the anterior ethmoids and opened into the frontal sinus, and to my surprise I found absolutely no secretion but the headaches disappeared. Other symptoms, complained of by patients, are watery discharge from the nose, especially if the ethmoids are involved, obstructed breathing cacosmia, anosmia, repeatedly catching colds, sneezing, and in an occasional case dizziness. The dizziness which some patients complain of, I believe is due to sensory impulses conveyed through the branches of the fifth nerve to Bechterew nucleus, where these impulses act upon the vestibular tracts.

The objective signs in vacuum sinuses, and early stages of chronic ethmoiditis are very obscure excepting for the finding of a middle turbinate hugging the orbital wall; while in the later stages of ethmoiditis we find pathological changes in the middle and superior meati. Where the middle turbinate hugs the orbital wall, inflect the turbinate at its base to obtain a clear view of that area; to your surprise you will find various changes of the mucous membrane from a slight thickening to polyp formation, depending upon the length of time the condition has lasted.

A unilateral swelling with a dark ring under the eye should create a suspicion of sinus disease, as in a case recently seen by the writer, and which proved to be the result of a hyperplastic ethmoiditis. Since opening the cells the swelling has subsided and the dark pigment of the skin is practically gone.

I will not burden you with exhaustive details of case histories, wherein eye conditions are secondary to some sinus involvement, for I feel most

of you have seen like cases. I am frank to say that I believe that many conditions of the eye, and I might say over half of the cases I see, are due to some nasal disturbance, and most likely to the sinuses. I believe most of these conditions are not due to contiguity of the structures, as many observers would have us believe, but to nerve continuity, just as the blood follows the continuity of the blood vessels. The fifth nerve represents the sensory roots of all the motor cranial nerves from the third to the twelfth, inclusive, and in this way impulses are carried through the nerve trunks and in turn act upon the various portions of the eye. This organ is the point of least resistance, because it is in constant use the greater part of the 24 hours, and is a highly sensitive structure responding readily to slight impulses. To my mind the ophthalmologist and rhinologist have much to learn regarding the characteristics of the fifth cranial nerve.

The diagnosis of the non-suppurative type of sinus disease is not difficult if one examines his case systematically and carefully. The difficulty, however, lies in the earlier stages of the disease, and is often overlooked. It required in some cases numerous examinations and a trained eye to differentiate between the appearance of a diseased and normal mucous membrane, where pus is absent. If I am unable to see the hiatus semilunaris and anterior ethmoid cells I infract the turbinate, if then unable by anterior rhinoscopy to detect a diseased condition, I use, if possible, a pharyngoscope, which in my hands has been of inestimable value, and especially for the examination of the posterior ethmoid and sphenoid. In some cases I have been able to diagnose a single diseased cell. While this procedure takes a little more time, it should be resorted to in certain obscure cases. A case seen some time ago had been having exacerbations of conjunctivitis; the ophthalmologist had examined the eyes and prescribed glasses, but the condition continued. On examining the nose I found the middle turbinate hugging the orbital wall, and could not see the hiatus semilunaris or bullae, so infracted the turbinate, the mucous membrane covering the outer side of the turbinate, uncinate process and surroundings showed a normal condition. In examining the posterior ethmoid region I was able with the pharyngoscope to see two ostia, one looked normal, the other showed edema which

was local. A canula was then passed into the diseased cell and by compression with air produced an increase of the congestion and a feeling of pressure back of the eye. I then made an application of five per cent. silver nitrate into the cell and dilated the ostia; repeating this process at three different sittings, there was no return of the symptoms; it is now about four months since the last treatment.

Transillumination in my hands has been unreliable. The x-ray plate is of unquestionable value if taken by an expert roentgenologist and interpreted by a person experienced in reading x-ray plates, as the difference between the normal and diseased sinus is in some cases so light, the inexperienced will overlook important markings. The plates are of great value in making known to us the location and size of the cells and their relations to other structures, which is important if operative work is to be done.

In some cases the suction device by Brawley is of great assistance.

Many methods of treatment are advised for the relief of sinus disease, but a given case will depend upon the pathological conditions. Therapeutically little can be accomplished, unless the case is seen before marked changes take place, then local treatment and vaccine therapy may be of benefit.

Most cases are of the operative type, and many different methods of operating are advised, but the one I adhere most closely to is by Mosher of Boston; that of opening the agger nasi cell present in many cases; it is the most anterior of the ethmoid cells. Continue opening the cells from before backward on a level with the inner canthus of the eye to the sphenoid. I usually allow the middle turbinate to remain attached for a guide, and after the cells are opened remove it. If the turbinate is not of a ballooning type, and showing considerable pathological changes it is best to leave it untouched. If diseased to a great extent, bite the membrane which holds it in place with a Myles' biting forceps and snare it off at its posterior attachment rather than grab it with a forceps to tear it loose which to my mind is poor surgery. Having established free drainage from the ethmoid tract I usually put in a pledget of cotton saturated with about 2 per cent. iodine solution in water, and leave it in situ until the following day, when irrigations are used of nor-

mal saline; if granulations spring up they should be controlled by applications of silver nitrate, and if this proves ineffective they can be removed with a cutting forceps.

7 W. Madison Street.

THE BLIND SPOT.*

(A Preliminary Report.)

HARRY S. GRADLE, M. D.,
CHICAGO.

In 1668 Marriotte described an area of blindness in the field of vision, known now as Marriotte's or the "Blind Spot." Anatomical investigations proved that this area corresponded to a projection of the entrance of the optic nerve into the eyeball onto the visual field. But little attention was paid to this interesting condition until 1869, when Leber reported the simultaneous enlargement of the blind spot and the presence of a central scotoma in nicotine amblyopia. The findings of several other investigators coincided with those of Leber, and Wildbrand and Sanger adopted these two abnormal findings as pathognomonic of nicotine and alcohol amblyopia. Later Schirmer, as well as Holth and several others, reported a similar condition occurring in iridocyclitis, particularly of the traumatic and sympathetic types.

In 1906, Cantonnet investigated the blind spot in myopia and found an enlargement coinciding (to a certain extent) with the myopic conus. Examination of the same cases several years later showed a progressive enlargement in the cases of malignant myopia alone. From these findings Cantonnet concluded that a progressive enlargement of the blind spot in myopes was significant of a poor prognosis and to an even greater extent if the enlargement was toward the center of fixation.

But the most practical application of the blind spot was made by Van der Hoeve in 1909 and 1910. He reported seven cases of sphenoiditis and posterior ethmoiditis with ocular disturbances with marked increase in the size of the blind spot for all colors. In a later report he mentioned this symptom in 54 out of 59 such cases; while in over 50 cases of nasal disturbances of various

kinds the blind spot was enlarged but once. He, therefore, concluded that enlargement of the blind spot, with or without Uhthoff's muscle pain, in cases of nasal disturbance, was diagnostic of sphenoiditis, or posterior ethmoiditis, or both.

Before considering the clinical value of the blind spot it is necessary to speak briefly of its anatomical relations. Since the discovery of the fact that the blind area of the normal eye is due, not to an excessive proliferation of chorioid over the nerve head, as was formerly believed, but to a lack of the retinal elements, the backward course of the optic nerve fibres has been accurately plotted. We know that the fibres emanating from the retina immediately around the disc are found in the periphery of the optic nerve, conforming to the contour of the sheaths. This topography exists until the chiasm is reached.

Let us now briefly consider the relation of the orbital periosteum, the dura mater, and the optic nerve. The bony walls, separating the orbit from the accessory sinuses are thin and are almost honeycombed with perforating or diploic veins. This produces an intimate relationship between the periosteum covering both sides of the bony partitions. The orbital periosteum conforms to the shape of the orbit, forming a funnel with the apex in the optic foramen. As this latter passage-way is narrow and must transmit a number of isolated and insulated structures, an economy of space is necessary. To accomplish this, the intra-canalicular portion of the orbital periosteum blends with and becomes inseparable from the intra-canalicular portion of the dura mater. (The arachnoid and pia are also compressed and the intra-vaginal spaces nearly obliterated). Thus there exists an intimate relationship between the dura of the optic nerve and the periosteum of the accessory sinuses, via the diploic veins and the orbital periosteum.

For a complete understanding of this subject, a short description of the vascular supply of the optic nerve and its sheaths is necessary. The anterior 15 mm. of the nerve is under the influence of the central artery of the retina and its veins. Back of this for 10-15 mm., there is a stretch of nerve without any vessels except for a few capillaries, and surrounded by sheaths that contain but few vessels. From this point backwards (25-30 mm. back of the globe) the veins of the dura drain toward the center of the nerve. They gradually

*Read at the sixty-fifth annual meeting of the Illinois State Medical Society, at Springfield, May, 1915.

unite near the optic foramen to form the vena nervi optici centralis posterior, or as it is more commonly known, the central vein of Kuhnt and Vossius. This lies in the exact center of the nerve and eventually empties into the cavernous sinus. Surrounding the temporal side of this vein in a crescentic form, lies the papillo-macular bundle.

Keeping these three factors in mind, it is not difficult to comprehend the mechanism of optic nerve involvement of accessory sinus disease. There must be a direct extension of the inflammatory process from the sinus periosteum through the diploic veins, or lymph-channels, to the orbital periosteum and thence to the intra-canalicular portion of the dura. The process may be a simple edema, may be a toxemic, or a suppurative one. If the dura alone is involved and it becomes edematous or swollen, pressure is thereby made upon the periphery of the optic nerve, and the fibres leading from the retina around the disc suffer first: i. e., an enlargement of the blind spot occurs. If the process involves the veins, so that an edema surrounds the Kuhnt-Vossius vein, due to inflammatory changes, embolism, or what not, the papillomacular bundle is pressed upon and a central scotoma results.

This preamble of more or less well-known facts is merely to introduce a simple and accurate method of testing for enlargement of the blind spot. The apparatus consists essentially of a frame $\frac{1}{2}$ meters square, tightly covered with any indifferent coarse paper. The patient sits comfortably at a table, with the head fixed by a chin-rest and with one eye covered. The direction of fixation is maintained by two points, one-half way between the patient and the screen, and the other a pencil mark on the screen. The testing point is a blued-steel ball bearing, 3 mm. in diameter and it is held on the anterior surface of the screen by a small electro-magnet behind the screen. The magnet is actuated by three or four dry cells. In actual use the ball is rolled over the screen in a horizontal line until it enters the blind area. This moment is signalled by the patient by means of a push-button lighting a small electric lamp, located outside of the patient's range of vision. As soon as the light flashes the location of the tip of the magnet is marked upon the posterior surface of the screen by a pencil mark. The process is repeated in

other meridians until the outline of the blind area is completely mapped out. To record the size of the area the paper is laid upon a glass plate, divided into centimeter squares, and the exact size and location of the blind area noted. For preservation of this record the figures thus obtained are reduced to one-fifth and recorded upon millimeter square paper.

I have made measurements with the screen at all distances from 30 cm. to $2\frac{1}{2}$ meters from the patient, and have found a constant distance of 60 cm. to be the most practical. The accompanying is an outline of a blind spot measured at this distance, both in the original size and reduced to the millimeter scale. The small outshoots at the upper and lower end of the figure are the projections of the retinal vessels as they leave the disc and cover the retinal perceiving apparatus in these areas. At greater distances the vessels can be even more accurately mapped out. The entire apparatus is extremely simple and can be constructed easily by anyone with a penchant for carpentry.

SYPHILIS OF THE INTERNAL EAR.*

G. HENRY MUNDT, M. D.,

CHICAGO.

Probably a better title for this paper would be syphilis of the auditory apparatus of perception.

The perceptive apparatus may be grossly divided as follows:

1. The labyrinth (internal ear) which may be divided into the cochlea and semi-circular canals.
2. The auditory or eighth cranial nerve, which divides into the cochlear (which probably should be designated as the auditory), and the two vestibular branches (nerves of orientation).¹
3. The cortical centers.

It is at times possible to locate a lesion as in one of the distinct divisions of the perceptive apparatus, however, in my experience this is not frequent, usually it is possible to go no farther than to say that the trouble is not located in (at least not limited to) the conductive apparatus.

Permit me in a few words to dispose of a number of important particulars upon each of which considerable time might be spent very advan-

*Read at the sixty-fifth annual meeting of the Illinois State Medical Society, at Springfield, May, 1915.

tageously but is precluded by the necessary brevity of a presentation of this type.

1. History: If it is possible to get a history of the initial sore it assists very greatly in the diagnosis; however, when this cannot be secured one may find something even in the remote past which is very suggestive. A few well directed questions are very important.

2. Concomitant Lesions: There is such a multiplicity of distinct local lesions caused by lues that two or more may coexist, for instance one may find aural and nasal syphilis coexistent. I have seen a patient with a luetic iritis and a perceptive apparatus lesion at the same time.

However, the labyrinthine lesion usually manifests itself when other local symptoms are not present.

3. Wassermann Test: A Wassermann should be made in all cases, if for no other reason than to complete the history. A blood Wassermann is usually sufficient; however, if it is negative, one should be made on spinal fluid. A positive blood Wassermann with a negative spinal fluid may coexist, and vice versa; from my analysis of Ellis and Swift's cases it seems that a positive blood reaction is much more apt to be present with a negative spinal fluid than vice versa.²

All other laboratory methods which may be of diagnostic value in syphilis are included under this heading.

4. Therapeutic Test: However objectionable may be this term, its importance should not be forgotten, as in my experience the prognosis as to hearing is reasonably good and results are seen rather soon if treatment is started early and is sufficiently energetic.

There are two distinct varieties of auditory syphilis, i. e., congenital and acquired.

CONGENITAL OR HEREDITARY.

It is not my purpose to consider this to any extent because acquired syphilis is of much more interest at this time.

Politzer says: "Those forms of severe hardness of hearing or total deafness which usually develop in both ears during childhood must be regarded as syphilitic affections of the labyrinth of a hereditary character."³

According to Hutchinson and Jackson, the ears are affected in ten per cent of all children who have hereditary syphilis. Hermet and Baratoux give this proportion as one-third. Bezold con-

siders either of these figures as considerably too high.⁴

Bezold states that this condition assumes third place among the causes of deaf-mutism (i. e. after meningitis and suppurative otitis media).⁵

Hereditary syphilis usually manifests itself during the first half of the first decade of life, and is much more frequent among females. The ear affection is rarely, if ever, the first manifestation of hereditary lues. Sudden deafness of high degree is usually the first manifestation of the ear affection; vertigo or tinnitus may precede the disturbance of hearing. The diagnosis is made by the presence of concomitant affections, as for example keratitis, iritis, or Hutchinson teeth, or from the family history. Treatment consists of treatment for the general disease; however, the results are usually not what could be desired, as the hearing is ordinarily lost.

ACQUIRED.

About the pathology of this condition very little is known, new formation of connective tissue and bone in all the spaces of the labyrinth has been observed, also swellings and lymphomata of the auditory nerve are described.⁶

Ellis and Swift state that it should not be considered an isolated disease of the organ of hearing, but merely a manifestation of that extremely serious condition, syphilis of the central nervous system.⁷

The men who early described this condition regarded it as purely labyrinthine, but it is now considered by most observers as a nerve lesion.

Wile and Stokes present a most interesting study of twenty-six cases of syphilis which came under their observation; sixteen were subjected to eighth nerve investigation (by R. Bishop Canfield). Of the sixteen cases eleven were positive and five negative, i. e. a percentage of 62.5. Of the eleven positives eight presented positive spinal fluid (Wassermann, etc.) and three were negative. Of the five cases presenting no involvement of the auditory apparatus three were positive and two negative, i. e. spinal fluid findings. They consider any involvement of the acoustic or orientation faculties as central nervous lesions.⁸

An effort is made by some authors to classify this condition into various types, but I am unable to see any necessity for this, neither am I able to devise a method of classification.

Acquired labyrinthine syphilis usually occurs in the tertiary or the secondary stage. Politzer reports a case occurring on the seventh day following the primary sore, but a labyrinthine lesion is certainly a rarity during the primary stage of lues.

There has recently been considerable discussion about labyrinthine manifestations of syphilis in the early period of the disease (i. e. primary and secondary stage), especially following the use of salvarsan. This feature will be considered more extensively under the head of treatment.

The lesion is usually bilateral but may be unilateral; it is, however, by no means uncommon to have an unequal involvement in the bilateral cases, in fact it is the rule.

Eighth nerve syphilis is more frequent among males than females.

In labyrinthine syphilis any or all of the symptoms which may be produced by a disease of the internal ear may be present, i. e. deafness, tinnitus, dizziness, and disturbed equilibrium; either one may be the only symptom complained of or any combination may exist.

Deafness is by far and wide the most frequently complained of symptom; it is usually of very sudden onset, rapidly becoming very marked from which time it is usually not progressive.

The subjective noises are very often intense and are very persistent; even after the deafness is complete the subjective noises may be very annoying.

Baranay reported a case with normal hearing, with a nystagmus toward the healthy side, in which the vestibular apparatus did not respond to caloric irritation, or when the body was rotated on its long axis. He attributed these symptoms to an isolatedluetice affection of the vestibular apparatus.⁹

On inspection the membrana tympani may be found normal or the middle ear may be the seat of a very foul suppuration which may also be caused by the lues; this is rather infrequent, however. Or naturally this condition may be found in the presence of any other middle ear affection.

Given a patient complaining of deafness, the diagnosis is made by first localizing the lesion in the internal ear (which may usually be done when the Weber is lateralized to the better ear,

the Schwabach shortened, and usually the Rinne negative, also the upper tone limit may be lowered); or given a patient complaining of a disturbance of equilibrium, or tinnitus, which may be localized in the labyrinth; especially if the symptoms have developed rather rapidly in a person giving a history ofluetice infection or with some concomitant lesion, or with a positive Wassermann test, one is justified in making a diagnosis of syphilis of the perceptive apparatus. However, the above hearing tests would be altered if the lesion developed in the presence of some other ear affection.

Differentiation from otosclerosis is usually possible by the rapidity of the onset in lues, and the history of the case.

Definite localization in a distinct portion of the perceptive apparatus is by no means easy; however, with synchronous equal involvement of the cochlear and vestibular functions, especially if there be no involvement of other cranial nerves, one is justified in locating the lesion back (i. e. centrally) of the division of the eighth cranial nerve into its cochlear and vestibular branches (this would be practically a central nervous lesion); especially would this be true if the spinal fluid showed a positive Wassermann, positive Noguchi, and the cell count should be materially increased (which would indicate a meningitis). However, if there is unequal involvement of the cochlea and semicircular canals, the lesion must be located distal to the nerve division, and is probably a pathological change in the labyrinth proper.

Relative to the prognosis, most authors say it is poor; however, my experience has been that given an early diagnosis with energetic treatment, there is rapid improvement of the symptoms with a final result of nearly normal hearing; that is as complete a cure as may be expected in any of the late or nervous manifestations of syphilis. Ellis and Swift report several cases which they say "demonstrate how satisfactorily hearing may return if the diagnosis is promptly made and thorough treatment instituted before irreparable damage to the nervous tissue has resulted."¹⁰

Treatment: Most authors speak of local treatment, as for instance, instillation of a potassium iodide solution into the middle ear, massage back

of the ear with mercurial ointment, etc. In my opinion these procedures are worthless.

In recent cases Politzer, many years ago, advised the subcutaneous injection of a two per cent solution of pilocarpine hydrochloride in increasing doses four to twelve drops daily, this to be tried first, and if no marked benefit after eight to fourteen days he advised the use of mercury and potassium iodide.

Until the advent of salvarsan the use of inunctions (mercurial) seemed to be more favorably thought of than the iodides; however, I had very satisfactory results from large doses of potassium iodide, and its use seemed more logical in a tertiary lesion (which this usually is).

At the present time salvarsan seems to be the treatment of choice, especially combined with mercury and iodides.

Since the advent of salvarsan considerable interest has been aroused in eighth nerve syphilis because of the numerous reports of labyrinthine involvement early in the disease, especially following the administration of 606, and some observers have thought that in some way the salvarsan was responsible for, or at least precipitated the affection. After a careful review of this condition, Prof. Alexander of Vienna believes:

1. That, when acute or chronic disease of the auditory nerve or labyrinth is present in the early stages of syphilis, whether the auditory nerve lesion be syphilitic or non-syphilitic, salvarsan is a dangerous drug and should not be administered.

2. That in the tertiary stage of syphilis or chronic or latent syphilis, the occurrence of an acute affection of the auditory nerve should be regarded as a contra-indication to the use of salvarsan.

3. On the other hand, there are a large number of cases of chronic syphilitic involvement of the auditory nerve and chronic labyrinthitis complicating chronic syphilis in which he regards salvarsan as a safe and valuable remedy.¹¹

Ehrlich's explanation of this is that they are due to the administration of salvarsan in insufficient doses, i. e. doses which have been large enough to control the general manifestations of the disease, but which have failed to devitalize certain isolated groups of spirochaetae in the cranial nerve sheaths; and that the activity of

these neglected spirochaetae gives rise to a perineuritis.¹²

The opinion of Ehrlich is accepted by most observers; to support these views Benaire presents the following facts:

1. The long interval frequently intervening between the injection of salvarsan and the manifestation of cranial-nerve involvement.

2. The nature of the pathological process itself, which, as is particularly evident in the lesions of the optic nerve, exhibits the characteristic features of an irritative or inflammatory lesion (Schantz, Tobias), rather than those of nerve atrophy, which is the lesion usually observed as a result of poisoning by other arsenical preparations.

3. That the disease (that is nerve lesion) occurs almost exclusively during a fixed period of the disease.

4. That, so far as it is yet known, such nerve lesions are not observed in diseases non-syphilitic in origin, following treatment by salvarsan.

5. The curability of such nerve lesions by anti-syphilitic remedies, and particularly by salvarsan injections.

6. That such nerve lesions have usually followed the administration of small doses of salvarsan.

7. That exactly the same manifestations have occurred under treatment by mercury.¹³

An ideal treatment in my opinion for labyrinthine syphilis would be frequent intravenous injections of salvarsan followed by inunctions of mercury, which (course of salvarsan and mercury) is to be repeated if the Wassermann remains or becomes positive."

BIBLIOGRAPHY.

1. Kerrison, Philip D.: Textbook of Diseases of the Ear.
2. Ellis, Arthur W. M., and Swift, Homer F.: Involvement of the Eighth Nerve in Syphilis of the Central Nervous System, J. A. M. A., May 1, 1915, p. 1471.
3. Politzer, Prof. Dr. Adam: Textbook Diseases of the Ear.
4. Politzer: Ibid.
5. Bezold, Fr., and Siebenmann, Fr.: Textbook of Otology. Holinger translation.
6. Bezold and Siebenmann: Ibid.
7. Ellis and Swift: Ibid.
8. Wile, Ude J., and Stokes, John Hinchmann: Further Studies on the Spinal Fluid With Reference to the Involvement of the Nervous System in Early Syphilis.
9. Politzer: Ibid.
10. Ellis and Swift: Ibid.
11. Alexander: Possible Effects Upon the Auditory Labyrinth of the Ehrlich-Hata Remedy, Annals of Otology, XX, 441-9. From Kerrison, Ibid.
12. Kerrison: Ibid.
13. Benario: Zur Statistik und Therapie der Neurorezidive unter Salvarsanbehandlung, Munch. med. Woch., LVIII, 732. From Kerrison, Ibid.

FOREIGN BODIES IN THE RESPIRATORY TRACT.*

STANTON A. FRIEDBERG, M. D.,
CHICAGO.

In considering the subject of foreign bodies in the air passages, the writer will only attempt to give some of the phases that have occurred in his own experience citing briefly a few illustrative cases in regard to the symptomatology, diagnosis and treatment of the condition.

In as much as the majority of these accidents occur in very young children, a definite history is often unobtainable. When a history is secured it is usually stated that some foreign substance has been swallowed. No distinction is made between the act of deglutition and that of inhalation or aspiration. In older children, fear of parental reproval will often cause them to conceal the fact of the accident. A false sense of security may be induced also by the fact that after the initial attack of choking or strangulation, the symptoms may subside and clinical evidence of the effects of the foreign body may not be apparent until some time afterward.

The pressure upon the trachea of a large foreign body in the esophagus may cause respiratory distress and result in some confusion in diagnosis. An illustration of this may be found in the following case:

Four months previously a child 2 years of age had swallowed some beads, all of which were thought to have been recovered. Following the accident an attack of bronchitis came on. The respiratory symptoms such as coughing, dyspnea and wheezing had been more or less constant. There was some slight difficulty in swallowing bread, a fact that was elicited later. Owing to the preponderance of the respiratory symptoms and with the history of an accident, the presence of a foreign body in the trachea was suspected. A roentgenogram, however, showed a large oval object about the level of the sternal notch. A glance at the picture showed the improbability of an object of the size shown to be resting in a small trachea and accordingly the diagnosis of a foreign body in the esophagus was made. By esophagoscopy an irregular oval part of a large pearl button was removed. Recovery was uneventful with a cessation of the respiratory symptoms within three or four days.

Suggestive of the presence of a foreign body in the bronchial tract, especially in children, are

various pulmonary conditions where the etiological factors are obscure. Among these may be mentioned localized bronchitis, chronic pneumonia, bronchiectasis or abscess. In a number of such cases that I have seen, the diagnosis has been cleared up after the lapse of several months or years only when a roentgenogram has been made.

A foreign body entering the respiratory tract may lodge either in the larynx, trachea or some part of the bronchial tree. Anything large enough to cause complete obstruction to the glottis will cause death immediately unless help is at hand. In other instances, depending upon the size and position of the object, we may have hoarseness or even complete aphonia if it is between the vocal cords. Cyanosis, cough, pain or dyspnea may vary to a considerable degree. The symptoms from being due to mechanical causes in the beginning may gradually increase in severity owing to increasing inflammatory reaction. In a certain number of cases the larynx is very tolerant to the presence of extraneous substances. I recall a patient with an eyelet imbedded in the larynx for two and a half years. Very little discomfort was complained of except for the condition of hoarseness.

A region of the respiratory tract which is especially subject to the irritation of foreign substances is the subglottic area. An object passing over or lodging in this space may cause swelling or edema which may rapidly become grave. The same condition may be produced by a small foreign body which has passed below this area, but which moves up and down with the respiratory current and which by its impact against the lateral subglottic space, causes an edema. The symptoms produced by this subglottic edema are the same as those found in what is commonly called croup.

When the foreign body is situated either in the larynx or trachea, we find that while the amount of air entering the lung is diminished it is about equal on each side. However, an exception is found occasionally. Recently a child 22 months of age came under my notice. Two days before she had been playing with some coffee beans, the total number of which the mother was sure did not exceed three. The child was seized with a choking attack whereupon the mother introduced her finger into the baby's

*Read at the sixty-fifth annual meeting of the Illinois State Medical Society, at Springfield, May, 1915.

mouth and recovered the three beans. Since the accident the breathing had been difficult and the child could not rest. When I first saw her the obstruction to breathing was very marked with retraction of all parts of the chest with each inspiratory effort. The stridor could be heard at quite a distance. At first glance it seemed reasonable to expect that the obstruction, whatever its nature, was subglottic. On examination of the chest, air in diminished quantity was found entering both sides of the chest, but to a considerable extent less on the left than on the opposite side. Upper bronchoscopy without anesthesia disclosed a coffee bean resting on the bifurcation, its larger part being over the entrance to the left bronchus, the remaining portion causing the obstruction on the opposite side.

When a foreign body is located in a bronchus the dyspnea will vary according to its size and the tissue changes produced by it. A small object in a bronchus not sufficient to cause obstruction will not produce dyspnea and for the time being very little cough. As the irritation increases the clinical signs will become more manifest.

For the diagnosis of a foreign body in the bronchial tract, we depend upon the physical findings in the chest and the roentgenogram. If a foreign body is of sufficient size to either partially or completely obstruct a main bronchus before any branches are given off, we will find a corresponding diminution or absence of the respiratory sounds over that entire side. If the object is located below the upper lobe branch we will find air entering the unaffected portion. Of course, this applies to recent cases, since in old cases the infection resulting from the presence of extraneous substances in the lung will sooner or later extend to the entire lung and even produce changes on the opposite side.

The roentgenographic examination is an extremely valuable aid, both for the determination of the presence and the localization of the foreign body. Unfortunately many objects will not produce a shadow on the plate. This applies particularly to kernels of grain or peanuts, beans and seeds. However, I have had one case, that of a watermelon seed in the right bronchus, in which the shadow was accurately delineated. Metallic objects practically always are sharply defined. The only exception I have met with was in a patient who had been wearing an alum-

inum tracheotomy tube. This had broken off at the collar. An unsuccessful attempt at removal had been made. When she entered the hospital a roentgenogram was made which was negative. Bronchoscopic examination disclosed the tube in the right bronchus from which it was removed with some difficulty on account of its curve. The shadow cast on a plate from an enlarged or calcified bronchial gland may lead to confusion in suspected cases of foreign bodies. In doubtful or suspected cases a bronchoscopic examination should be made. Failure to find a foreign body does not necessarily exclude the possibility of its presence. There is a limit to the size of the tube that may be employed in searching the divisions of the bronchi in infants and young children. A small object may be easily hidden in a secondary bronchus, and may be coughed out after the examination. It must not be forgotten that foreign bodies may have been present long enough to produce subglottic or pulmonary symptoms before being coughed out. The presence of an excessive amount of secretion or pus may also hide a foreign body. All these conditions add to the uncertainty of bronchoscopic work.

The changes produced in the lung and the severity of the same will vary perhaps with different individuals and with the size and nature of the aspirated object. In some patients a rapidly progressing pneumonia is present. In others there may simply be a localized bronchitis. Where metallic substances have been present for a long time, the changes produced are fairly constant and characteristic. The irritation of the bronchial mucous membrane leads at first to granulation tissue formation which in course of time becomes organized into connective tissue with subsequent contraction. This produces a stricture below which we have primarily a dilatation of the bronchus. This becomes infected and granulation tissue forms with breaking down of the bronchial wall. The bronchiectatic process extends to other divisions and may subsequently terminate in a definite lung abscess.

Little has been written as to the progress of patients after the foreign body has been removed in these chronic cases. Naturally the prognosis is better if the offending object is out but the mere success of removal does not end the chapter. A stricture of the bronchus still remains a

stricture after the primary cause is removed. A cavity persists and unless it can be drained it will continue to cause trouble. For this reason these patients must be kept under observation. When possible, periodic dilatation may be carried out or the question of thoracic drainage must be considered if the cavity is of considerable size.

In regard to the treatment, it may be stated that blind attempts at removal of foreign bodies in the larynx or through a tracheal opening if in a bronchus, are inexcusable. So much better work can be done under direct vision that only those who are unacquainted with modern progress will attempt to work in the dark. The damage that may be done may be sufficient to preclude any chance of recovery that the patient may have had before the operation. When bronchoscopic methods are used the precautions must be equally great. All manipulations must be done as delicately as possible and under direct vision. If the foreign body is in the larynx the use of a tube is unnecessary as the direct speculum will give a wider exposure and a broader field for instrumentation. The direct speculum is indispensable as an aid to the passage of the bronchoscope especially in children. For proper work, one should have trained assistants and an armamentarium sufficient to meet any necessity that may arise. Anesthesia, either general or local, should be avoided when practicable, especially in children. Both add an unnecessary danger to the patient. If marked subglottic edema is present the dyspnea may be relieved for a time by the passage of the bronchoscope but it is almost sure to return. One must be ready to perform intubation or tracheotomy without delay. When possible the former is preferable, but I have seen several cases in which it was impossible for me to introduce an intubation tube.

Whether upper bronchoscopy or lower bronchoscopy should be done is largely a question of the skill of the individual operator. Other than in exceptional cases the upper method should be employed. If much dyspnea is present it may be necessary to open the trachea immediately. A tracheotomy, however, may add another danger and complications to recovery. From the standpoint of technic, practically the only danger in the upper method is the use of an oversized tube with its forcible passage through the larynx and

subglottic area. Edema is almost sure to follow. Infancy or youth is not a contraindication to the upper method. My youngest patient was an infant three months of age in which upper bronchoscopy was performed for the removal of a small safety pin. Jackson is a strong believer in the upper route and has stated that "everyone should battle strongly against the advocacy of tracheotomy for all bronchoscopies under two years—an advocacy that was originally based upon early instruments and technic which later developments have rendered obsolete, but which threatened to persist by tradition."

The actual removal of a foreign body may present considerable difficulty. Soft substances such as the kernel of a peanut may crush in the grasp of the forceps. The kernels of grains may swell so as to obstruct completely the lumen of a bronchus, rendering it difficult to pass the forceps between the bronchial wall and the foreign body. In the old cases in which are usually found metallic objects, such as tacks, nails or pins, the narrowing of the bronchus with the constant outpouring of pus through the stricture will require infinite patience in removing the secretion before a view of the field can be obtained. By the time a clean field is secured the patient as well as the operator may be exhausted. It may be impossible to pass even the smallest tube through the stricture and if a forceps is introduced into the cavity and the foreign body fortunately found and grasped, considerable damage may be done if the object is a tack or nail, by tearing or perforating the bronchus. If the latter accident happens, a pyo-thorax is almost certain to result with consequent grave danger to the recovery of the patient.

In the past two years Dr. E. Fletcher Ingals and I have operated on several cases by means of roentgenoscopic bronchoscopy. In the hands of one familiar with bronchoscopy, the anatomy of the bronchial tract, and the pathological conditions found in the chronic cases, it seems to me that this method should prove safe. For one inexperienced or unfamiliar with the above factors, this procedure would be extremely dangerous. The exact status of the method remains for future determination.

104 S. Michigan Ave. .

FOCAL INFECTIONS WITH ESPECIAL
REFERENCE TO THE TONSIL.*FRANK BRAWLEY, M. D.,
CHICAGO.

The interest in the lymphoid tissues of the pharynx, and particularly that portion known as the faucial tonsil, has recently been revived in connection with the study of focal infections.

Studies in comparative anatomy show that the faucial tonsil becomes more complex in its structure as it is traced from reptiles up to man and that therefore it cannot be considered a vestigial organ, but one with a definite function. To discover this function much elaborate research work has been undertaken, which in certain instances has apparently resulted in diametrically opposite findings. Piera reports results showing that live bacteria are more rapidly absorbed into the tonsil tissue than various inert pigments, and Lexer¹ applied virulent cultures of various organisms to the surface of dog's tonsils and produced fatal results with streptococci. On the contrary, Jonathan Wright found that when he filled the tonsil crypts with a mixture of live bacteria and carmine powder and in fifteen minutes enucleated the tonsils, the carmine was within the epithelial layer but no bacteria. Wright explains that the viscosity of the organisms prevents their passage through the crypt epithelium and that also in practically normal tonsils a bacteriolytic ferment is secreted by this epithelium which either destroys the invading organisms or minimizes their virulence, indicating that one of its functions may be protective.

It is probable also that this protective function is most active up to the age of puberty. In further support of the tonsil as a protective organism is the observation of Jacobi that when a diphtheria membrane is confined to the tonsil the general reaction and local glandular swelling are slight. Stöhr, Brieger, Goerke and others claim to have demonstrated an outward lymph stream through the tonsils, which carries with it many lymphocytes and prevents an influx of bacteria. This finding is one of the few points generally agreed upon by investigators. Barnes² believes that this great production of lymphocytes is for

the blood, as few escape into the crypts and he therefore considers the function of the tonsil to be hæmopoietic.

Persistent efforts to discover an internal secretion in the tonsil by Caldera and others have been negative and, at the most, we may say that if such a secretion exists it must be in common with the other groups of histologically similar lymphoid tissue throughout the respiratory and alimentary tracts. Again, in spite of all the thousands of tonsillectomies of recent years, no one has shown bad results due to the loss of any theoretical tonsil function.

The most recent work on the physiology has been done by Henke³ and Amersbach.⁴ Henke claims that his experiments prove that tonsil infections are of endogenous origin, being carried to the tonsils by many of the lymphatics of the mouth and nose. The experiments, briefly, consisted of injecting suspensions of india ink particles into the tissues of the nose and mouth and recovering them from the tonsils later, confirming previous work by von Lénart. The particles were found only in certain of the serial sections of the tonsils, however. Amersbach very carefully repeated these experiments, using on man colloidal iron known as electromartiol, and on animals chiefly cinnabar. In no instance in man could the suspended particles injected into the tissues of nose and mouth be found in the enucleated tonsils. In three of fourteen cases such particles were thought to have reached the tonsils of dogs. These supposed particles Amersbach later showed to be air bubbles and particles of condensed moisture due to an error of technic in preparing the sections. This clearly explains Henke's observation that only certain sections showed the particles. Amersbach had no difficulty, however, in demonstrating the particles in large numbers macroscopically in the submaxillary lymph glands of dogs, though never in the tonsils.

The mechanical function of the tonsil has been dealt with at length by Faulkner in his book, *The Tonsil and the Voice*, 1913. After reading his many excerpts from the literature, however, one cannot help but think that he has used only those statements which seem to prove his case. Doubtless he is right when he says that the

*Presented before the Eye, Ear, Nose and Throat Section of the Illinois State Medical Society, Springfield, May, 1915.

1. Archiv. f. Klin. Chirurgie, Bd. 54.

2. The Tonsil, 1914.

3. Archiv. of Laryngologie, Bd. 28, Heft 2, S. 231, 1914.

4. Archiv. of Laryngologie, Bd. 29, Heft 1, S. 59, 1914.

tonsil is an important factor in voice production, acting as a moveable, compressible fulcrum over which the pharyngeal muscles may play in their myriad combinations of position for modulating tone. Faulkner quotes one eminent singing master, Lamperti, as saying that in fifty years of teaching he has found that every case of removal of the tonsils has seriously injured the voice. Such testimony, and it is not unique, should warn us to be cautious in operating upon singers and to have a clear understanding with them as to possible harm resulting.

We come now to a consideration of the experimental work of two Chicago investigators, Rosenow and Davis, who have shown us the tonsil as a menace.

Davis⁵ reports the presence in 30 of 122 tonsils in children of actinomyces-like granules which contain cocci of the streptococcus group, spirilla, bacilli, and filaments. The cocci are of low virulence, but produce arthritis in animals when injected intravenously in large amounts. The bacilli and the filaments are considered to be different forms of the same organism, *Bacillus fusiformis*. It has not been proven that these organisms are pathogenic for man, but if not producing focal infections they still serve as a nidus, which might produce Vincent's angina or noma, as they lie in areas inaccessible to the cleansing solutions used in the mouth. The appearance of tonsils is no guide. They may be submerged and natural drainage so interfered with. Partially removed tonsils are particularly harmful, as fibrous tissue forms at the cut surface and occludes the crypts.

Davis⁶ has studied many forms of streptococci from tonsils and finds them all in varying degree capable of producing arthritis in animals within two or three days after intravenous injections. Davis has recovered streptococci from the infected joints, but they tend to disappear rapidly. In 10 per cent of all animals injected an endocarditis results.

Jackson⁷ has found in animals so treated, focal lesions in the heart muscle consisting of round cells, and in the older lesions large giant cells and also cocci, especially soon after the injections. Davis has found that many cases are improved

by vaccines, but some are made worse and some are very susceptible even to small doses.

It has been noted that ulcers of the stomach and small intestines are more frequent in regions where infections of the throat are prevalent and that ulcers already present undergo exacerbations during acute throat infections. It has, however, remained for Rosenow of the Memorial Institute for Infectious Diseases, Chicago, to prove these theories by a series of animal experiments. Pneumococci isolated from the blood of pneumonia patients were transformed into hemolytic streptococci by passage through a number of animals. They were then found to produce gastric and duodenal ulcers, cholecystitis, nephritis, myositis, arthritis and appendicitis. These pathological processes were caused chiefly by certain strains of streptococci, slightly more virulent than those found in rheumatism, but rarely of a high degree of virulence. Many of the strains in these experiments were secured from the infected human tonsils, and it is reasonable to suppose that similar infections may occur in man from streptococci.

Rosenow has further elaborated these experiments in an essay presented before the Section on the Practice of Medicine of the A. M. A., June, 1914. He found that streptococci isolated from cases of rheumatism when injected intravenously, commonly produced arthritis, and that strains isolated from the gall bladder commonly produced cholecystitis and the same relation held good in the case of gastric ulcer and with the bacillus of erythema nodosum which on animal passage became a streptococcus with an affinity for joints, fascia, muscles and endocardium.

In arthritis deformans Rosenow isolated various organisms from the lymph glands near the affected joints while cultures from the blood and joint exudate remained sterile. The type of streptococcus thus isolated resembled streptococcus viridans, though differing from those found in the tonsils in that they were of low grade virulence and anaerobic.

With the result of these various investigations before us we will, I think agree that only diseased tonsils should be removed and that every possible means at our command should be used to recognize pathological conditions in the tonsil. In addition to sacrificing a functioning organ, we must remember that the operation is not without

5. Jour. Infectious Diseases, XIV, 1, 144-153.

6. Ill. Med. Jour., September, 1914.

7. Jour. Infectious Diseases, 1912, XI, 243.

its dangers; also, that operative shock as Crile tells us, is an important consideration.

It may be that, considering the tonsil to be an organ of slight importance, many have been needlessly removed. It has been considered a simple operation which every one may safely perform, and I will agree that every surgeon who will take the trouble to develop his technic as the specialist has done, should be able to properly enucleate tonsils. But a safe, accurate operation, properly conserving all tissues not tonsillar in character, cannot be developed without study. The day of the operation which removes the exposed portion of the tonsil and digs for the rest with punch forceps should be over. There is, however, quite as much criticism due those who allow their patients to suffer from the far-reaching general effects of toxin absorption, recurring tonsillitis and peritonsillar abscess with ear complications because of their alleged conservatism.

In making our diagnosis we will start with Faulkner's definition of a normal tonsil. This he states, is "a tonsil which lies between the anterior and posterior palatine arches in healthy condition and of such size as not to project beyond the lines of the palatine arches and so small as not to interfere with the perfect anatomical outlines of the walls of the pharynx."

By deep pressure against the tonsil at its base and over the velar lobe with a blunt right angle hook the presence of infectious material may be detected and specimens obtained for cultural studies. The absence of such material, however, does not mean that the tonsil is free from disease. Many tonsils studied after removal have shown walled off crypts, often containing pure cultures of streptococci, and probably resulting from former inflammatory processes. A deep red color to tonsil and pillars, showing a low grade chronic inflammation is of value. Palpable anterior cervical lymph glands indicate that toxins are being absorbed from nose, mouth or pharynx and by eliminating the other possible sources may aid in incriminating the tonsils.

The history of attacks of tonsillitis is not particularly valuable, as attacks of sore throat are easily forgotten and serious tonsil disease has repeatedly been found in the absence of any such history. Where general evidence of a focal infection is present all possible sources should be studied. The teeth, nasal accessory sinuses, gas-

tro-intestinal tract, including especially the gall-tract and appendix, the urinary bladder and prostate, isolated enlarged glands, a possible pyelitis, etc., should be carefully studied and eliminated before condemning the tonsils. If, however, no other probable focal area is found or treatment of such area has been unsuccessful the tonsils should be promptly and properly enucleated. Close co-operation with the internist and pathologist is essential.

The enlarged but apparently non-infected tonsil in children, who easily "take cold," have a reflex cough, or cannot be brought up to par by proper diet and hygienic measures, should be removed, especially if previous removal of the pharyngeal tonsil has been of little benefit.

In St. Luke's Hospital, Chicago, histological examination of all tonsils removed shows three per cent to be tubercular. The great majority of these tonsils came from children and in no case has the tubercular process been suspected before operation.

It is not reasonable to expect miracles to follow tonsil removal in cases of arthritis particularly, as joint metastases have occurred and may therefore delay or minimize cure. This fact makes it the more necessary to take advantage of the opportunity to obtain vaccines from the enucleated tonsils for the future treatment of the case.

The following case reports give practical application of our studies of the tonsil:

Case 1: E. H. M., aged 50 years, October 6, 1911. Sore throat periodically and cheesy masses from tonsils noted; mixed infection, pneumococci, staphylococci, unidentified bacilli. Trichloracetic acid was applied to the tonsil crypts July 10, 1914, with relief from soreness and caseous masses.

July 21, reported pain in hands with swelling of carpal and metacarpal joints.

September 22, still much discharge from the crypts on pressure.

October 17, 1915, tonsils enucleated and painful reaction followed. Dr. Moody, St. Luke's Hospital, reported large pseudoray fungi in crypts.

This patient suffered from exophthalmic goiter and had been examined and treated thoroughly for this and metabolic disturbances without relief from the arthritis. The thyroid was enlarged and soft; pulse 120; blood pressure 160, systolic; stomach showed hyperchlorhydria with total acid 76; urine showed marked acidosis. Complete relief from arthritis.

Case 2. Miss E. J., aged 53 years. Complained of tinnitus, worse upon exertion. There was mild tubal inflammation which yielded readily to catheterization, without, however, relieving the tinnitus.

March 13, 1908, severe acute tonsillitis and pharyngitis. Was examined thoroughly and diet, elimination, etc., ordered. The tinnitus promptly ceased. Had several tonsil infections and treatment of crypts was of little avail.

April 13, 1912, toxic pains in throat, joints of hands swollen. Tonsil exudate showed many pneumococci and unidentified bacilli.

June 25, 1914, the very small tonsils were enucleated and showed pure culture of hemolytic streptococci. A vaccine was made and 12 injections given. All pain from the arthritis ceased within five days after operation and the joint enlargement disappeared gradually in about 3 to 4 weeks.

May 6, 1915, patient reported normal health and that one metacarpal joint remained tender until within the past two months.

The details of the general examination follow: -

Miss E. J. Examined in August, 1911. At that time she showed normal physical findings. The blood showed a picture of distinct secondary anemia. The stomach showed subacidity, the total acid measuring 30, mucus in excess, but otherwise normal. The later analyses of the stomach showed normal findings. The blood increased to normal and her weight improved but the joint disturbances continued and because of that she had her tonsils taken care of.

Case 3. P. V. C., aged 60 years. History of many throat infections for which local treatments were given. Has peculiar hacking cough; swollen anterior cervical lymph glands on right side, painful; pain along second division of fifth nerve. Left tonsil showed small abscess in the velar lobe. Smear showed mixed infection chiefly encapsulated diplococci.

December 1, 1914, tonsils were enucleated and autogenous vaccine prepared at St. Luke's Hospital.

Dec. 14, wounds healed and all above symptoms had ceased. Ten doses of vaccine were given and it was noted that her former lumbago had disappeared also. Dr. Moody's report showed hemolytic streptococcus, streptococcus viridans and large amounts of retained epithelium in cyst-like dilated crypts and small abscesses. This patient had been exhaustively examined and other sources of focal infection ruled out.

Examined first in May, 1914. She showed slight dullness over the right apex but no rales. The rest of the physical findings were negative. The blood pressure measured 120 systolic and 100 diastolic. An x-ray examination of her chest showed some dullness over the right apex, but no evidence of active involvement. The colon showed a highly spastic condition, but the stomach was entirely negative in the bismuth study. The stool showed mucus and fermentation in excess and a large amount of undigested food detritus. The urine showed a high acid and great indican excess. Under treatment the patient became more comfortable and improved, but her bowel still remains stubborn and needs encouragement from time to time. She is now under mechanical measures to help get her colon into better condition. Her

later urine analyses showed a distinct improvement over the earlier ones and were practically normal.

Case 4. J. T., aged 10 years. Adenoids and hypertrophied tonsils but no exudate on deep pressure. Anterior cervical adenopathy. Tonsils were enucleated December 28, 1914, and Dr. Moody reported hyperplasia of the lymphoid tissue and small abscesses in several crypts. This case, while showing no general manifestations of focal infection, illustrates the possibility of overlooking the tonsil infection as no secretion could be expressed from the crypts. The child has taken on weight, is free from colds, has better appetite and is better in every way especially in his school work.

Case 5. P. B., aged 20 years. Seen August 5, 1914., because of swollen anterior cervical lymph glands which had been noted for two months. Iodine treatment had previously been used without result. Present condition followed a severe tonsillitis which he has frequently experienced. Smear from exudate expressed from tonsils showed a mixed infection, chiefly streptococci and no tubercle bacilli.

Tonsils were enucleated August 2, 1914, and unfortunately only a histologic examination was made, which showed increased connective tissue.

January 16, 1915, the cervical lymph glands were removed as the tonsil operation had no effect upon their gradual enlargement. Dr. Moody reports tuberculous lymphadenitis. No arthritis. Great gain in weight, blood nearly normal and feels well.

Case 6. M. J. A., aged 40 years. Has had many nasal sinus and ear infections and several attacks of tonsillitis. Thorough investigation and treatment of the general condition were beneficial, but did not relieve the arthritis and myositis.

The general findings were as follows.

Eczema about the ears and axillae; blood pressure 130 systolic, 100 diastolic; stomach subacidity, total acid 28 with reduced amount of ferments; stool showed large amount of undigested meat fibers; increased bacteria and fermentation; secondary anemia.

Sept. 22, 1914. Smears from expressed tonsil exudate showed encapsulated diplococci singly and in short chains, and staphylococci.

Oct. 27, 1914. Culture showed pneumococci.

Dec. 5, 1914. Muscles of right side of throat swollen and painful swelling of ankles.

Dec. 31, 1914. Tonsils enucleated. Dr. Moody reports marked increase in connective tissue; on culture hemolytic streptococci 20, streptococcus viridans 1. An autogenous vaccine was made and 12 doses given.

Jan. 27, 1915. All myositis and arthritis had entirely disappeared.

Case 7. J. E. P., aged 42 years. July 5, 1911, complained of difficulty of hearing but all tests normal except some shortening of hearing time for the 1024 and 2048 forks. Eustachian tubes, middle ear and membrana tympani normal. Thorough general care improved the ear symptoms.

October 28, 1914, reported rheumatic pains and swollen joints. Small infected tonsils. Smears showing

a mixed infection chiefly encapsulated diplococci. Trichloracetic acid to the infected crypts and autogenous vaccine were used with partial improvement then relapses.

February 2, 1915, small tonsils were enucleated. Mr. Moody reports histologically, small islands of cartilage in each tonsil. Bacteriological examination showed hemolytic streptococci 20 and streptococcus viridans 1. No vaccines were used in this case.

J. E. P., examined in July 1911. Her general physical findings were negative. She had a moderate grade of anemia. The stomach showed a picture of hyperchlordia, the total acid measuring 65, but there were no findings of ulcer. The urine showed nothing abnormal. Under treatment she improved very much. Her headaches disappeared and she was discharged from the office, but reappeared in July, 1912, and complained of swelling of both feet and legs. At that time she showed a myocardial disturbance and was put upon suitable measures for her heart. The swelling disappeared and has not returned since that time. Later examinations of her stomach showed normal findings. An x-ray examination made in July, 1914, showed a perfectly normal stomach, somewhat prolapsed, moderate dilation of the heart, and a colon distended throughout with the bismuth mass suggestive of an atonic bowel. The urine picture in the later months has been normal. The headache has been gone for some time. However, she had arthritic manifestations and some evidence of neuritis and it was because of this that we urged that her tonsils be carefully investigated. She has improved since that time. No arthritic manifestations.

Case 8. J. B., aged 35 years. General diagnosis, atypical hyperthyroidism with gastro-intestinal disturbances. Improved with diet and hygienic measures. No arthritis.

History of many attacks of sore throat. October 16, 1914 low grade inflammation of left tonsil with ulcer on its posterior inner surface and anterior cervical adenopathy. Smears from expressed tonsil secretion showed encapsulated diplococci, some in short chains, fusiform bacilli and spirilla of Vincent. Wassermann negative.

February 12, 1915, enucleated tonsils. Dr. Moody reported small crypt abscesses and pure culture of hemolytic streptococci.

March 13, 1915, patient reported comfortable throat which she had not experienced in years. Improvement in general condition is ascribed at least in part to removal of infected tonsils which undoubtedly were a factor in producing the hyperthyroidism.

Case 9. I. C. E., male, aged 29 years. Was first examined November 7, 1903. He gave a history of an attack of iritis two years before in the left eye and was said to have rheumatism, and one attack of sciatica lasting three months. He had several attacks of gonorrhea followed by so-called gleet. The earlier attacks were treated with sweats and salicylates and empirical diet generally, and with atropia, dionin, duboisin locally, etc. A rheumatic sore throat

accompanied these attacks. This patient passed through four attacks before the work in the chemistry of metabolism could be applied.

April 11, 1912, he came on account of sore throat. The tonsils were somewhat hypertrophied but no secretion could be found in the crypts and no inflammatory process existed. The sore throat was a toxic neuritis, as shown by the results of the general examination made at this time.

General examination report by Dr. M. M. Portis:

Mr. I. C. E., seen first August 20, 1912, shows the following: Slight enlargement of the thyroid, a fine tremor, but no tachycardia. The blood pressure measures 115. The stomach test shows a picture of acid catarrh, the total acid measuring 88; no occult blood; ferments present in normal amount; motor power normal. The blood showed a distinct secondary anemia. The stool showed undigested meat fibers and excessive fermentation. I consider him a case of masked or atypical Graves' disease.

Mr. I. C. E. has been sending specimens since August 20, 1912, at variable periods depending upon his condition. The stool picture has been variable. Whenever Mr. E. has been allowed to take a small amount of meat, or has taken it without permission, the stool has promptly shown undigested muscle fibers in excess, a large amount of fermentation, bacteria in excess and increased mucus. The urine picture has shown an increased acidity, the presence of indican and indolacetic acid and an increase of the ethereal sulphates. It has been interesting in his case that his clinical symptoms, especially those of the throat, have varied with his pathologic laboratory findings.

Eye Findings: June 30, 1913. Fresh attack iritis right eye, recovering under atropin and general régime. Nose was again found negative.

August 15, 1913. Sudden iritis in the left eye with marked vitreous haze and deposits on posterior lens capsule. At this time Wassermann was negative; gonorrheal fixation test was negative; bacteriologic examination of secretion from the prostate was also negative. General treatment was resumed and patient confessed to irregular observance of diet, etc. At this time mercury inunctions and K. I. were used for a time but abandoned.

September 20, 1913. There have been no more attacks, and vision remains the same at the time of writing this report, when with astigmatic correction L. E. = 20/20 - 2; R. E. 20/15 - 1.

October 11, 1913. Throat still sore and soreness in muscles of neck.

August 25, 1914. For first time tonsils showed secretion, which on smear seemed to be pneumococci. Tonsils were enucleated August 27, 1914. Dr. Moody reports marked increase in connective tissue. Cultures showed hemolytic streptococci 20. Streptococcus viridans 1. Six doses of the autogenous were administered. There has been no sore throat since.

April 29, 1915, recurrence of mild iritis right eye following use of alcohol and diet indiscretions. No sore throat or muscle soreness.

Case 10. J. K., Jr., aged 10 years. Below par physically, small for his age, no appetite, languid, school work very much below average, difficulty in using eyes, although eye examination showed only small amount of hypermetropic astigmatism.

General examination as follows: Signs of old rachitis; slight tenderness over ileo-cecal region indicating possible quiescent appendicitis; secondary anemia; stool negative. As a course of diet and hygienic measures gave only partial relief the author was asked to examine the tonsils. Adenoids and infected tonsils were found and removed.

Dr. Moody reported January 24, 1915, hemolytic streptococci 2, streptococcus viridans 5, and hemolytic staphylococci 10 from tonsil cultures.

May 5, 1915, his general condition was entirely normal. There has been a very marked gain in weight and appetite. His last school report showed such high marks as to receive special approval from the school principal.

THE DIAGNOSIS OF OTOSCLEROSIS.*

G. W. BOOT, M. D., F. A. C. S.,
CHICAGO.

Before speaking of the diagnosis it is well to state definitely my conception of otosclerosis. I believe otosclerosis to be a non-suppurative osteitis of the bony capsule of the labyrinth secondary to a primary focus of infection elsewhere in the body, which focus of infection is frequently situated in the tonsils or accessory cavities of the nose. It is the same process that occurs in rheumatoid arthritis.

This paper is based on the records of 50 cases of which I have seen 40. The other ten records have been taken from the histories in the Central Free Dispensary.

In the Central Free Dispensary we use a Bezold Edelmann set of tuning forks. In my private work I use a set of c tuning forks giving the octaves of 32 dv, 64, 128, 256, 1024, 2048 and 5096, the A Edelmann fork vibrating 3 minutes when forcibly struck, and the Edelmann whistle. The A fork is used for determining the duration of bone conduction; the c = 256 dv. is used for the Rinne; the lower limit is recorded as the number of vibrations given by the lowest fork heard; and the upper limit is recorded as the number of vibrations per second of the Edelmann whistle.

If my conception of what constitutes otosclero-

sis is correct we may have the following conditions:

1. Otosclerosis causing fixation of the stapes.
2. Otosclerosis in the vicinity of the stapes without causing fixation.
3. Otosclerosis involving the apical turn of the cochlea.
4. Otosclerosis involving any intermediate portion of the cochlea.
5. Various combinations of these conditions, the most frequent of which is otosclerosis in the vicinity of the stapes with fixation of the stapes.
6. Any of the above conditions may be far advanced, i. e. with degeneration of the organ of Corti or of the cochlear branch of the auditory nerve.

Bezold's trial holds good for the first and fifth of these conditions only, since it is dependent on fixation of the stapes.

To discuss these various conditions separately:

1. *Otosclerosis causing fixation of the stapes.*

The diagnosis of this condition is the diagnosis of bony fixation of the stapes and is made on the Bezold triad of:

a. Elevation of the lower tone limit. A moderate elevation of the lower tone limit occurs in any middle ear type of deafness but in no middle ear deafness is the lower limit raised as much as it is in bony fixation of the stapes. Where the lower limit is raised to 128 vibrations per second it can hardly be due to anything short of bony fixation, and bony fixation is highly probable if the lower limit is raised to 64.

b. Bone conduction prolonged for A. This symptom also occurs in any middle ear deafness but not to so marked a degree as in otosclerosis. When the A fork of the Edelmann set is used, which vibrates 3 minutes, a prolongation of bone conduction of 30 seconds speaks for bony ankylosis of the stapes. Middle ear deafness rarely causes this much prolongation of bone conduction for this fork and the more the conduction is prolonged, the more certain is the presence of bony ankylosis.

c. Negative Rinne for a. This again depends on the fixation of the stapes and may vary from a shortened positive Rinne through a plus or minus Rinne to a negative Rinne. The more marked the bony fixation the more strongly marked is the negative Rinne. In certain cases the a fork will not be heard at all by air conduction while it is

*Read at the sixty-fifth annual meeting of the Illinois State Medical Society, at Springfield, May, 1915.

heard much longer by bone conduction than the examiner hears it.

In addition to the Bezold triad we have:

d. *Paracusis Willisii*. This is an early symptom in most cases. It is not found in those cases where the bony ankylosis is confined to one ear, e. g. in the case of B. O. G., whose tuning fork findings are as follows:

Low limit, R. 28

L. 100

Upper limit, R. 11500

L. 6900

Whisper R. "28" = 1 m.

L. "28" = 10 cm.

In this case there was no bony fixation in the right ear and for this reason there was no *paracusis Willisii*. This accounts for the patient's opinion that "the statement that such cases hear better in noisy places is largely fake."

The same condition occurred in G. M., where the tuning fork findings were:

Low limit, R. 128

L. 32

High limit, R. = 25000

L. = 25000

Whisper R. "24" = 10 cm. "66" = 45 cm.

L. "24" = 4 m. "66" = 44 m.

Here there was no bony fixation of the left ear, hence no *paracusis Willisii*.

In some of the cases *paracusis Willisii* is a most striking symptom as in case of C. A. P. who stated that he "can hear a pin drop in a boiler shop"; or of E. B., who stated that on a train no one would know that she is deaf; or of M. D., who stated that when in the vicinity of music she hears as well as any one.

e. Explosive noises are heard in many cases and these are of sufficient intensity to awaken the patient from sound sleep, as in the case of E. A. and the other patient who stated that they were often awakened at night thinking that there was a thunderstorm, only to find the night clear.

f. Some of these patients speak in a low voice because the increased bone conduction misleads them as to the intensity of their own voices.

g. Some of these patients complain of dizziness, but these attacks are rarely severe or troublesome.

h. Some of these patients show a rosy hue in the region of the promontory, but such cases are

not common and this symptom is not confined to this form of otosclerosis.

i. Occasionally a patient has pain in the ear. This is not marked and may be due to the inflammatory process involving the articulation of the stapes and the oval window.

2. *Otosclerosis in the vicinity of the stapes but not causing fixation.*

The diagnosis of this condition is difficult. Obviously Bezold's triad is missing, since there is no bony fixation of the stapes. About the only symptoms that may be referred to this condition in the present state of our knowledge are:

1. Deafness for the upper tones in a young patient, particularly if unilateral and without obvious connection with meningitis, syphilis, mumps, or toxemia of any sort.

2. Bone conduction normal.

3. Low limit normal.

4. High pitched subjective noises.

5. Possibly rosy tint in the region of the promontory.

6. Local source of infection.

7. Progressive deafness.

3. *Otosclerosis involving the apical turn of the cochlea.*

Here the symptoms to be expected are:

1. Deafness for the low tones.

2. Bone conduction shortened for the low tones.

3. Young adult.

4. Female sex in the majority of cases.

5. A primary source of infection.

6. Exclusion of the ordinary causes of a labyrinthine deafness.

4. *Otosclerosis involving any intermediate part of the cochlea.*

Here we may expect to find:

1. Tone islands and tone defects.

2. Bone conduction shortened for the particular tones not heard by air conduction.

3. Young adults.

4. Female sex preponderating.

5. Ordinary causes of labyrinthine deafness should be excluded, particularly epidemic cerebrospinal meningitis.

This condition may be difficult or impossible to diagnose clinically and can only be made with probability in such cases of labyrinthine deafness

as depart from the ordinary course of labyrinthine deafness.

5. *Various combinations of the preceding forms.*

This is the most common form of otosclerosis and the diagnosis is based on the presence of the signs and symptoms already given for the different conditions.

6. *Far advanced cases.* Here the condition differs from the conditions already given in that these cases present the results of degeneration of the cochlear nerve and organ of Corti. On this account paracusis Willisii is often absent as in the case of Mrs. M. B. M., who stated that she formerly heard better in a noisy place but does not now. Her tuning fork tests gave:

Low limit R. 3906

L. totally deaf.

In these far advanced cases bone conduction may be very much shortened and air conduction entirely absent. In other words the findings of a labyrinthine deafness only may be present instead of the findings of a mixed middle ear and labyrinthine deafness. In such a case the history must be obtained. A labyrinthine deafness that began in young adult life with paracusis Willisii and loud explosive noises following some local source of infection is very apt to be otosclerosis.

Individual Symptoms.—The drum membranes were normal in 27 cases. One or both drum membranes were retracted in 23 cases. A reddish tint was present in the region of the promontory in four cases.

The Eustachian tubes were noted as open in four cases. In most of the histories this point was not noted.

The Rinne test was noted as negative in twenty-two. Not noted in the others.

The upper tone limit was lowered in 44, normal in 5; not noted in 1.

In one of the cases it was 19,000 when examined November, 1913, but had returned to the normal 25,000 in April, 1915.

The lower limit was:

32 in both ears in 6;

64 in both ears in 8;

32 in one ear and 64 in the other in 2;

128 in both ears in 9;

64 in one ear and 128 in the other in 7;

Above 128 in both ears in 13;

128 in one ear and higher in the other in 4.

That is, the lower tone limit was 128 or over in 33 cases. Explosive tinnitus was noted as present in 30 cases and as absent in 8. In the remainder of the histories this point is not mentioned.

Paracusis Willisii is noted as present in 30 cases and as absent in 6.

Low speaking voice is noted in 2. Not mentioned in the others.

Sex—Females, 36; males, 14.

Average age of females on seeking treatment, 34 years, 5 months.

Average age of females at onset of disease, 28 years, 8 months.

Average age of males on seeking treatment, 28 years, 6 months.

Average age of males at onset of disease, 19 years, 8 months.

I do not believe that the patients gave accurate data as to the time of onset of the disease in most cases. The following history is characteristic:

E. A., female, occupation housework. Aged 23 years. American. Single. Complains of deafness and tinnitus aurium. Father alive and well at 76. Mother dead at 52 of dropsy. One brother alive and well. One brother died in infancy. One sister alive and well. Patient had the usual diseases of childhood, including chicken pox, measles and mumps. Present trouble began at 15 following a bad cold. She became hard of hearing and tinnitus developed about the same time. The tinnitus is of a buzzing character, at times roaring and like pistol shots, or like the noise of a motor cycle. She has been awakened by them at nights. She was dizzy once or twice near the onset of the disease. She had a good deal of sore throat about the age of 12. She hears better than her normal sister when on the street cars. She also hears better in a noise.

Auricles normal. Canals normal. Mastoids normal. Facial nerves normal.

Hears whisper R. "24" = ad concham. "66" = 10 cm.

L. "24" = ad concham. "66" = 10 cm.

Bone conduction prolonged 35 sec.

Weber not lateralized for A.; lateralized to the left for c = 256.

Rinne R.—

L.—

Low limit R. 64.

L. 128.

High Limit R. 25000.

L. 25000.

Dizziness is mentioned in 7 of the cases.

Blurred hearing is mentioned in 2.

Bone conduction was shortened in 3.

Bone conduction was moderately prolonged without mention of the time in 8.

Bone conduction was prolonged:

15 sec. in 4.	40 sec. in 3.
20 sec. in 3.	45 sec. in 3.
25 sec. in 4.	50 sec. in 2.
30 sec. in 9.	55 sec. in 1.
35 sec. in 2.	60 sec. in 2.= 33 cases.

Much prolonged without mention of time in 2.

Average prolongation of bone conduction in cases where time of prolongation is noted 33 sec.

Of these 50 cases 31 gave a probable primary source of infection, but it must be remembered that most of these histories were taken before I was impressed with the fact that the disease was a secondary infection and that since then I have been able to get hold of but a few of these patients to investigate this point. In these 31 cases possible etiologic relationships were noted as follows:

- Scarlet fever 1.
- Measles 2.
- Diphtheria 3.
- Repeated sore throats 5.
- Atrophic rhinitis 2.
- Appendicitis 1.
- Nasopharyngitis 2.
- Mycosis tonsillaris 1.
- Tonsil and adenoid operations 7.
- Cheesy plugs in tonsils 3.
- Rheumatism 6.
- Started in childbed 2.
- Worse after childbirth 7.

One case not included in the above list showed this feature most distinctly. She was a patient in the maternity ward of Cook County Hospital; who had a slight infection following delivery. Her temperature rose to about 102 for three days. Her hearing, which had not been lowered enough to be troublesome before delivery, became so much worse that she could only hear the loud spoken voice close to the ear after her infection.

- Nervous and financial worries 2.
- Quinine 1.
- Meningitis 1.
- Blow on head 2.
- St. Vitus Dance 1.

Thus the conditions that are ordinarily considered to stand in a causal relationship to rheumatoid arthritis are mentioned 42 times in these

31 cases. I may say further that Dr. Rosenow told me in a private talk that he had found lesions in the ears of rabbits which he had inoculated with the rheumatoid arthritis strain of *Streptococcus viridens*. As yet I have been unable to procure any of these rabbit ears for microscopic examination.

122 South Michigan avenue.

URINARY ANALYSIS IN THE TREATMENT OF NEPHRITIS.*

B. G. R. WILLIAMS, M. D., PARIS, ILL.

"The master key to the door of Hope
May be held by you or me,
But pray what use is this master key
If withheld by you or me?"

Since man has ministered to man in his bodily afflictions, just that long has man studied these afflictions from as many points of view as could be devised, well knowing that only with perfect understanding comes perfect service.

I am not to blame for the subject upon which I have prepared myself. Your program committee merely notified me that I had been placed down for this title, and I suppose that I am expected to give a good account of myself. The subject is a unique one, and one which I trust will not prove an altogether unfortunate selection.

You will realize in the first place that it does not permit me to copy a paper from the journals and text-books, but forces me to theorize here and there and finally relate to you my observations.

We must assume that Bright's disease has been diagnosed in our patient, either by symptomatology or laboratory methods and that we are ready to plan our treatment. In what way will the uranalysis aid us to save his life, or make him as comfortable as possible until he succumbs?

Or will the uranalysis, in fact, provide any therapeutic indications whatsoever?

A study contrast may be wise before investigating the therapeutic indications; and it may be well for us to roughly classify the various methods of treating nephritis:

In class one, we must place the much to be

*Read by invitation before the Clark County Medical Society, June 10, 1915.

desired specifics. Various specifics for nephritis have been suggested, some based upon empirical and others upon rational grounds. It is a safe guess that hundreds of "sure cures" have been proposed, tried out and abandoned, and about the only ones remaining are those which are advertised in the newspapers.

In the second class come the symptomatics. Far be it from me to overlook the value of the symptomatics. We must not forget to treat the dyspnea, psychoses, cardiac complications, hemorrhages, diarrhea, nausea, headache, edemas, etc., as well as the unusual concomitants of diseased kidney.

Into a third great class fall the very important dietetic measures. These are based in turn upon indications suggested in part by either or both the symptoms and laboratory finds. Unfortunately in the past they have been somewhat empirical, but there is a tendency to drift toward rational views. Nowadays we do not deny to the nephritic many of those foods upon which we formerly frowned, while others to which we tied our therapeutic hopes have shown some serious shortcomings.

Without further ado let us proceed to the great fourth class of indications—those suggested by the uranalysis:

Amount.—The total 24-hour quantity of urine is of great diagnostic importance, but it is doubtful if we are justified in treating the polyuria of chronic interstitial nephritis. It is probable that the patient will be actually harmed by any measures aimed to reduce the total quantity. In the oliguric nephritides it may be advisable to increase the quantity of urine. In the selection of diuretics it may be well to warn ourselves that those which attempt to whip the renal cells into increased exertion, should be avoided. Thus from a theoretical standpoint at least caffeine, theobromine, diuretin and other renal diuretics should be avoided, and we should fall back upon water prescriptions or the cardiac diuretics as digitalis, strophanthus, etc. It seems to me that a severe oliguria must be considered quite as death-dealing as cardiac insufficiency or any other severe aspect in the clinical history. When day after day the amount of urine rarely exceeds one pint, it is evident that not enough water is present to hold in solution and carry away the necessary urinary solids. We speak of the

serious outlook in those cases where there is urea or chlorid retention, but give very little attention to what is perhaps the chief cause. I shall have something to say upon acid retention or fixation in the renal cell. If I should place a drop of sulfuric acid upon the skin of my arm and permit it to remain six hours, there would result a severe injury. But if I place the same drop upon my arm and add to it a single drop of water, the injury will be much less. And if I repeatedly add water the injury will be slight indeed.

I have referred to water prescribing. It is not sufficient to tell the patient to drink plenty of water. It is much better to prescribe it in sufficient dosage to be taken at regular intervals. I will have occasion to refer to this a bit later when speaking of Fischer's alkaline treatment.

Even as polyuria is perhaps not to be treated and even as oliguria should be treated, so anuria, a complication of frequent occurrence, *must be treated*.

Anuria, or complete absence of urine, for several days is always a condition of considerable importance, notwithstanding the many contradictory statements in texts. That anuria without uremia, may persist for a considerable period, I will not gainsay, but how unexpectedly convulsions and fatal coma may suddenly appear, has been realized by all of us. The kidney has for its purpose the secretion of urine; let this purpose be thwarted, and the condition may at any time quickly pass beyond the action of remedial measures.

Let me repeat; anuria is always a serious occurrence. Even though the patient laughs at your painstaking; even though the texts tell you that Dr. So-And-So reported a case where the patient recovered after a two weeks' anuria, do not fail to resort to the use of hot packs, pilocarpin and elaterin.

It has been said that anuria cannot be held responsible for the symptoms of uremia. Common sense shows the stupidity of such a claim. Of the nature of uremia, we know very little, but clinical experience convinces that it must be very closely associated with anuria. Do not underrate anuria.

The color, odor and general appearance of the urinary specimen may mean much to the diag-

nosis of nephritis, but there is no logical reason for their therapeutic correction.

The specific gravity is of some importance in connection with the total quantity of urine. In other words, the total solids are of some importance, especially a marked reduction. But I would say in general that quantitative studies of the urea, chlorids and so on are likely to give more definite and usable information so that we shall pass on hastily.

Reaction. The reaction of the urine in nephritis is rarely normal. That is, we rarely find a slight acidity due to acid salts but either an intense acidity or a marked fixed alkalinity which persists from day to day. These findings have confused us in the past, but since the wonderful studies of Fischer, we have come to understand them. All nephritides are acid in origin. These acids are variously derived, some from proteids in the process of decomposition. Thus either from proteid foodstuffs in the colon or from body proteids in local suppurative processes our contribution may come. These acids are of organic derivation and are essentially poisonous. Their presence in the urine gives it its high acidity. In the process of passing through the renal parenchyma the kidney cells are injured but retain the acids in part. At some stage in every nephritis, they refuse to further excrete the acids and either retain them in their protoplasm or force the blood to carry them elsewhere. Then the urine becomes alkaline and usually remains alkaline until death. Let us turn our attention to one of the causes of nephritis and show how nephritis may be cured by careful uranalyses undertaken early in the disease.

Among the acidemias that of colonic stasis is most important. We speak of the condition as intestinal acidemia, or copremia. In certain persons, as a result of constipation, excessive ingestion of proteids, enteroptosis or unknown causes, certain bacteria in the colon attack the proteid foodstuffs, breaking them up into organic acids and other decomposition products, and these are absorbed and appear, at least in part, in the urine. We do not know the exact composition of all these acid bodies. Among them have been found carbolic acid, indolacetic acid, acids of the sulphur series, hydrocyanic acid (?), paraoxyphenylacetic acid and paraoxy-

phenylpropionic acid. Besides these are the true indicans, which I shall consider later. Indicanuria and hyperacid urines have about the same meaning. Both conditions may occur at the same time.

Let us pass by the headaches and other symptoms of copremia with the remark that they are but the initial symptoms of the Bright's to follow, and study the action upon the kidney. In all cases of indicanuria and highly acid urine due to intestinal acidemia, we are very likely to find traces of serum albumin and hyalin casts. This does not mean at this time a hopeless nephritis, but it does signify that the injury to the kidney is consequential and must be checked. In fact, we will observe an attempt upon the part of the tissues to combat the acidemia, but the attempt protects the tissue cells other than those of the kidney. In other words, the ammonia of the urine is increased at the expense of the urea, because the alkaline precursors have united in part with these poisonous acids, that the fixed alkalies of the tissues may be spared, but this does not protect to any extent the protoplasm of the ultimate secreting renal unit. Of course, the total nitrogen is unaltered, but the urea is low, and this low urea must not be taken as indication of retention, cannot be, in fact, if the other estimations are made and considered.

Before proceeding to a consideration of the other poisonous urinary hyperacidities, let us look into the treatment of copremia, the cause of perhaps seventy-five per cent of all cases of chronic nephritis.

There is an old caution, "Examine the urine in every case of persistent headache."

There is a better caution nowadays, not only better from many other standpoints but especially for the reason that headache may occur a bit late in nephritis, "Examine every man's urine at least once or twice a year whether or not he complains of symptoms." Of course, this cannot be done in the majority of cases, but it does not lessen the value of the advice, for I am convinced that these forms of nephritis can usually be cured long before symptoms appear.

The man who hopes to treat intestinal acidemia by a course of alkalies alone will occupy a position similar to that of the boy who tried to drink up the water from the leaking dam. The man who hopes to accomplish noteworthy re-

sults by the administration of a single cathartic will be but little better off. Both of these methods are not without value, but there are other principles which must be carried out if any degree of success is expected. Only a week or so ago, I heard Fischer's alkaline treatment condemned by a local physician in no uncertain language, but he had depended upon a neutralization of consequences rather than an attack upon causes for his success, a principle which clings as closely to the mind of the average practitioner as did the old man of the sea round Sinbad's neck.

As a whole, the treatment of copremic acidemia may be expressed categorically as follows:

1. Reduction of the proteid diet.
2. Elimination of the focus of the intoxication.
3. Administration of antacids.

Obviously the main problem will lie in eliminating the focus of intoxication. But how?

A preliminary cathartic is necessary, and since we are dealing with the colon, this obviously must be a saline. Then should follow a course of laxative alkaline salines, to insure a strict housecleaning in this natural incubator. This may be coupled with the intelligent use of efficient intestinal antiseptics. We know that these will not murder every erring germ, nevertheless much may be accomplished in this direction.

Then after a week or so we cease giving the antiseptics but continue the laxatives—we are ready to substitute a well-behaved germ. Yeasts appear to be of some value, but the most efficient policeman of the colon appears to be Metchnikoff's bacillus bulgaricus; and this I do not hesitate to say, judging from my observations in hundreds of cases, will act almost as a specific when backed by proper attention to the other principles of treatment. The urinary reaction will become normal, ammonia will sink and urea rise, indicans will disappear. Albumin will disappear from the urine unless the case has gone too far, casts cannot be found, vertigo, nausea, mental torpor and headache will clear up, the complexion will become better and appetite will be regained. In other words, we have cured a case of nephritis. We have held and used the master key to the door of Hope.

Of antacids there is no lack and they may

be carefully used along with the treatment devised to eliminate the focus of intoxication.

Now and then this line of treatment may fail or must be continued indefinitely, excellent though it has proven in the majority of cases. What is the trouble? Examination will reveal that an enteroptosis or other anatomical condition exists favoring stasis; and here we must call upon the surgeon to help us out. As a rule these cases may be reached by proper dietetic and medicinal measures. I know of one case of so-called neurasthenia in which a trace of albumin and many hyalin casts brought home to the attending physician and myself the fact that this neurasthenia had an organic basis. High acids, high ammonia with normal nitrogen and indican gave us the clew. This case of enteroptosis was, I sincerely believe, rescued from the grave of a nephritic by the fact that two rapidly succeeding pregnancies by some means certainly mechanical (as supporting the colon) took care of the condition and the strain was removed from the kidney parenchyma. What this woman now needs is either an operation or another pregnancy.

In previous papers I have insisted that an acidemia may exist by virtue of necrotic changes in the tissue themselves. The findings in the urine are similar to those detailed above. Indicans are less frequently found. The breaking up of the body fats may add the fatty acids, those poisons recently shown by Tallqvist and Vetlesen to be essentially homolytic in nature (explaining, perhaps, the severe anemia associated with some of the nephritides); still the picture of high acids, constant nitrogen and ammonia overbalancing the urea is not unlike that noted in the copremic acidemias. The blood examination will reveal an iodophilia and set us searching for the focus in a necrotic tumor, localized pus, tuberculous exudate, etc. (lardaceous kidney), in all cases there being truly an excretion of poisonous proteid-decomposition-products via the urine.

All of which will explain why proper attention to the colon does not always clear up an acidemia. Now it has been known for many years that hidden suppurative processes, though of a low grade, may lead to nephritis, and though the theory has been popularized by Billings and others, no special credit is due these men, but it is rather to our discredit that we

once learned and again unlearned the lesson. Perhaps the theory was carried too far at the time. At any rate our attention is again directed to the nasal sinuses, tonsils, teeth, lymph glands, lungs, gall bladder, appendix and so on in our search for the factory where the poisonous acids are made. I have seen instances where the removal of a decaying tooth was followed not only by beneficial results as noted by the appearance of the patient, but a vicious appearing urine promptly became normal. If the focus cannot be found, we should at least use neutralizing antacids to spare the kidney parenchyma as much as possible.

Serum Albumin. We have seen above that a trace of albumin may be loosed into the urine when the renal cells are forced to excrete poisonous bodies. This brings us to the entire question of albuminuria and its significance.

When a slight heat and nitric acid precipitate cannot be explained by nucleoproteids, Bence-Jones body, calcium phosphate, etc., or when such coagulum is marked or persistent or both, we are dealing with true serum albumin, a finding which is never physiological.

Serum albumin may be derived in part from the blood, escaping through the glomerulus by virtue of general or local alterations in blood pressure, injury either to the endothelium or secreting epithelium, or for unknown reasons. It may be derived from the kidney cells by virtue of retrograde changes.

The albuminurias have been variously classified. The only class with which we are concerned is the "renal albuminuria." To prove a true renal albuminuria, several rules must be kept in mind, to wit:

1. The albumin must be serum albumin.
2. The albuminuria must be persistent or nearly so.
3. The other serum albuminurias must be ruled out.
4. The presence of cylinder casts, cells from the uriniferous tubules and so on argue for true renal albuminuria. How shall we treat renal albuminuria?

We have touched upon the logical treatment of the incipient cases, and there is no better treatment for the more progressive cases of albuminuria. *Clean up the focus of poison manufacture.*

We must do more in the more progressive cases of albuminuria, and a few principles are here suggested.

All of this serum albumin does not come from the kidney, but much of it from the blood; and it is probable that the patient does not have this albumin to spare. It is in just such cases that lecithin and nuclein, administered for prolonged periods, prove peculiarly efficacious. In acceptable form they provide exactly the reconstructive material demanded by the discouraged cells, and the remote metabolic wrong being corrected, the drain ceases.

There is abundance of clinical proof that an active preparation of cactus grandiflorus, through its influence upon the heart and circulation, materially improves nutrition and reduces the output of albumin. Many well informed and observant therapeutists prefer cactus to any other preparation, as digitalis, in such cases.

It may then be advantageous to treat the albuminuria by aiming our efforts at the blood pressure; investigate the heart and arteries, and give digitalin (or cactus) or glonoin, with elaterin or milder laxative as indicated and the albumin of circulatory origin will be held back except in so far as released by diseased kidney tissue. I know of no way to prevent the escape of circulating albumin when the renal substance is already destroyed; we certainly cannot hope to check it by attention solely to the heart and arteries.

Can we decrease the serum albumin resulting from cloudy swelling of renal cells and the ultimate plasmolysis consequent upon it? I think that we can; in fact, Fischer apparently proves that this process is directly due (except, perhaps, in mercurial nephritis, etc.) to a storing up of acids in these cells and injury to the protoplasm. Thus the indications (other than the prevention of acid elaboration where possible) are clear for dilution and alkalization. In other words, we must prescribe water and alkalis freely if we hope to decrease the albumin from this source. This will explain why alkaline remedies given with copious draughts of water, often produce such marked benefit in the earlier stages of nephritis.

But as yet we are clutching only at the fringes of knowledge. We know something concerning nephritis but some particulars of the pathology

are not yet clear. And how may we successfully treat a disease until we know its pathology? We have shown that the measures aimed at avoiding acid fermentation and neutralizing those acids or else diluting those already formed comprise the rational treatment of albuminuria. But we are justified in the absence of complete pathological knowledge in turning to certain remedies now regarded as empirical, but which tomorrow when our research workers have cleared up this baffling field, stand best chance of a place in our rational list. Of these special mention is to be made of the active principle of the bear berry—a grain an hour at first and when the albumin drops lower in daily excretion, to give a grain every four hours thereafter. Now I can say very candidly that I have never seen any one remedy clear the urine of albumin in so many cases as does the bear berry, and I have seen it tried upon a large number of cases usually in connection with the fight upon the acids.

A couple of months ago I saw two cases of nephritis secondary to influenza in which the bear berry was not satisfactory. The physician claimed excellent results in some of these cases with an active iron. We did not secure the proper preparation at the time but used instead a proprietary preparation of iron with excellent results. After giving the iron, the bear berry completed the clearing of the urine.

Epsom salt is advised upon empirical grounds, not by mouth but as follows: A tub is filled with hot water previously saturated with epsom salt. The patient sponges quickly so that the salt solution comes into contact with every particle of the skin. Immediately he deserts the water and rubs or is rubbed briskly with a rough towel. This treatment is not applicable to the more serious cases because of the exercise.

Let me hastily review the treatment of albuminuria as such:

1. Prevent, if possible, acid formation.
2. Dilute and neutralize all acids the formation of which cannot be prevented.
3. Keep the blood pressure and heart action as perfect as possible.
4. Bear berry and active iron are, in my experience and observation, most excellent empirical remedies.
5. The epsom bath is good in some cases.

This is all I shall have to say concerning the

treatment of renal albuminuria as such. Not enough, perhaps, but my observation is that one line of treatment persistently followed often accomplishes much more than a "running hither and thither." I have seen tuberculous infection conquered by a monotonous routine of months; I have seen leukemia held in check and apparently cured by pushing one drug for a year. I have seen a man with pernicious anemia poisoned with arsenic which incidentally added years to his life. I have seen whooping cough, the disease of a thousand remedies, cut down to a week or so, from discouraged Osler's six weeks—"and by a bottle of something better than paregoric."

The text book tells us to try a little of this for a short time, and if we do not succeed we might try a little of something else. Now, I do not treat patients, but I have seen several cases of albuminuria treated, and my advice is: give each remedy a fair trial. Albuminuria does not appear in a day, nor can it be cured as quickly as that. The methods suggested in this paper are not claimed to be the best. You may know of a much better way of treating renal albuminuria, but do not be discouraged if spectacular results are not witnessed within a few days—aye, a few weeks.

A few words as to the diet. I cannot well undertake the dietetic consideration of the various nephritides as suggested by other laboratory findings, by symptoms and by signs, but rather from the standpoint of albuminuria. What effect, if any, does diet have upon the albuminuria? You will see that I have accounted in part for the albuminuria by cell death but in part from the blood, and I may get into pretty deep water if my treatment does not cover other causes.

I am told that excessive ingestion of proteids may increase the serum albumin in the urine, and observation in special cases would lead me to suspicion that this is true.

What of it? Must we in consequence withhold proteids from our patient when he needs them to take the place of those albuminous bodies passing away in his urine? This would be extreme. Precipitin tests may show dietetic albumin in the urine, but precipitin tests do not give percentages. In fact, dietetic albumin may be present in amounts of 1 per cent, serum albumin from blood and renal cells up to 99 per cent.

No, we have not yet proven that a renal albuminuria is an alimentary albuminuria.

Scalia has shown that when egg albumin is injected subcutaneously there may be an induced albuminuria in nephritics. But Scalia has proven nothing pertinent to the great question. Upon a mixed diet including eggs no reliable research worker has conclusively shown that the urine of a nephritic shows egg albumin in appreciable quantities. Krasnogorski has shown that the albuminurias of infancy contain no specific groups characteristic of the dietetic proteids, but that the bodies are derived entirely from the tissue albumins.

In chronic albuminuria the indications are somewhat different from acute nephritis. In the latter the fight is short and dietetic measures may be rigid. But how may we expect to lengthen the lives of our chronic nephritics by starvation? I have seen these patients taught by some quack or some shortsighted physician, test their own urine for albumin day after day, cut down their own miserable existence or make life almost unbearable for their friends. Quantitative albumin estimations are of some diagnostic worth but of little prognostic value.

A mixed diet is necessary for the nephritic, and this diet must contain certain proteids—milk, eggs and even meats (especially the white meats). An absolute milk diet may be advisable in acute nephritis but never in chronic nephritis in that it is too rich in albumins.

Albuminuria may better be treated from a dietetic standpoint not by eliminating proteids but by doing away with kidney poisons—alcohol, red meats (kreatinin) and condiments, especially sodium chlorid, of which I will speak later.

I have given so much time to the indications supplied by albuminuria of the serum type, I must hasten over the other albumins without comment.

Urobilinogen is important inasmuch as it suggests a very useful therapeutic test in the complicated cardiac-hepatic-nephritides where we are not certain of therapeutic indications and of which is the primary condition. I cannot otherwise go into the question of the significance of urobilinogen, a pigment which means much in the liver diagnoses. Under digitalis treatment the disappearance of albumin and urobilinogen points to primary heart disease, the disappearance

of urobilinogen alone to hepatic disease and the disappearance of albumin alone to primary renal disease. I am very sorry that I have not the time to enter fully into urobilinogenuria.

Bilirubin. When bilirubin appears in the urine of nephritis, the outlook is serious for bilirubin is more poisonous to the renal cell than is an organic acid. The toxic desquamation of pigmented cells furnishes the proof. The treatment, of course, depends upon the cause of the bilirubinuria and cannot be considered here. Undoubtedly many cases of chronic parenchymatous nephritis are directly due to prolonged or severe bilirubinemia.

Carbolic acid, indican, indolacetic acid, etc., have been considered under the subject of acidity.

Chlorids. A high sodium chlorid content to the urine of any nephritic suggests reduction, for we know that retention either in part or entirely is more likely to occur; and that this salt retention favors edema, dyspnea and other complications. At a certain point in almost every case of nephritis, the kidney cells excrete weakly or not at all the superfluous salt. Knowing now as we do of the law of salt equilibrium, we do not hesitate to exclude as nearly as possible all salt in these late cases. The salt is excluded at the dining table. It is excluded in the kitchen. We have even gone further and selected foods of a low salt content, especially milk, though we must keep in mind the caution concerning milk mentioned above. So rather than suggest any one perfect salt poor article of diet, we usually advise a diet mainly of milk and milk products, chicken, eggs and vegetables, avoiding especially other meats.

Phosphates. The irritating action of phosphates in large quantities upon a diseased parenchyma has been pointed out by von Noorden and others. It is impossible where true or clinical phosphaturia complicates nephritis, to expect much from diet, inasmuch as phosphoric acid is so well distributed in our foods. But von Noorden has shown that calcium carbonate added to the diet precipitates the phosphates as insoluble compounds, and they pass through the intestinal tract unabsorbed and consequently the renal cell is spared the duty of eliminating them.

Urea. A low 24-hour excretion of urea is taken as evidence of renal retention of that salt. It is not stored in the renal cells so far as has

been demonstrated but is kept in the blood and excreted by the other emunctories. Thus it may be demonstrated in the perspiration, and perhaps in the feces (?). The indication is in part, therefore, to call upon these for extra work in case of urea retention. We know of no means by which it may be increased in the urine late in nephritis, urea being of itself the most perfect diuretic. It is advisable, of course, to reduce the proteid diet to just what is necessary, not because urea is poisonous but closely related bodies may be very toxic. We must not forget that low urea in every case of nephritis may be explained in part by the acidemia, the ammonia being used in part to neutralize acids or acid action and that low urea is in part explained by failure of elaboration. But we know that urea retention does occur or else urea would be excreted by the proper route instead of by the skin, lungs, etc.

Cylindroids. Nephritis is not diagnosticated by the finding of cylindroids. Without any attempt at definition and differentiation, I will say that the cylindroid does furnish a therapeutic indication in nephritis. The false cast means a sluggish flow of urine through the tortuous secreting kidney tubule. But it is interesting to know that down through the animal and vegetable kingdoms, one of the laws of health is prompt removal of products of excretion. It may be true that even at Bowman's capsule there was a water paucity and a solids overplus, cells down the line may be reabsorbing the watery portions—upon all of these points we cannot definitely commit ourselves, but nevertheless we have to face the fact that the flow has been retarded sufficiently for a muco cast of that uriniferous tubule to be formed. The treatment is that apparently of hastening the flow through the kidney and dilution. Consequently water prescribing or even the use of mild diuretics may be indicated.

Casts. The treatment of the cast matrix is essentially the treatment for renal albuminuria, it being fairly certain that hyalin is very closely related to serum albumin. It is not in all cases an excreted albumin but often the remains of a microscopie extravasation into a uriniferous tubule.

Granules and cells are extraneous to the cast pathology and their attachment or inclusion

accidental. Therefore, the treatment differs. Cells and granules represent desquamation and retrograde changes respectively and the indications are those suggested by finding the renal cells in the urine.

Kidney Epithelium. I have been hurrying over the indications somewhat more rapidly than their importance justifies and I ask you to let me go more fully into the meaning of the kidney cell, the most important of all finds. Kidney cells occurring in the urine in considerable numbers or persistently, is a matter of deep concern to the therapist. The pathologist tells us that the cell from the uriniferous tubule when lost is not regenerated, and that its neighbors must take upon themselves the work of the lost one or else this work be left undone. Whether the poison be bacterial, bilirubin or acids it may slay the renal cell and it floats away into the urine forever. Other cells as in the shower of contracting kidney, are mechanically dislodged.

But the toxic desquamation is the more common type and death is brought to the ultimate secreting unit merely because it retains the poison being unable to pass it on. These renal cells of ours have hard tasks set before them in their span of three score years and ten, but after all a cell is a living mass of protoplasm, and no matter how great the specialization, all living matter may be killed. Of all factors, poisonous organic acids are chief, no matter where these acids may be formed—we know very well the focus in most cases. Just as there result cloudy swelling, coagulation necrosis and granular disintegration, so do these acids often pick upon the cement substance first of all, dissolving it, so that the cells are no longer bound to the membrana propria but slip into the current and are lost forever. And the finding of protoplasmic granules, nuclear remnants, granules in casts, tiny fat droplets or renal cells, all have the same significance.

I have spoken of the focus and the desirability of its elimination even though too late to repair the damage to an extent sufficient for a return to health. But nothing should be omitted which promises hope of prolonging life or making more comfortable the remaining days of the unfortunate.

It may not be the fault of the family physician, but rather the ignorance and carelessness of

the *patient* that he is dying of Bright's. Although merely a neutralizing treatment we must not forget the alkalies. In acid retention as indicated by the uranalysis, I can do no better than to repeat the recommendations of Fischer:

Acid intoxication is itself proportional to the concentration of the acid; and this must be kept as low as possible. This can be done by giving water. The administration should be regular. The night administration of water is as important as that throughout the day, for the production of toxin does not stop with nightfall. If the water contains an alkali of some sort so much the better. If the patient will tolerate it, one-half to one gram of sodium carbonate may be added to each glass of such alkaline or plain water.

CONCLUSIONS.

Nephritis may be cured. It may be cured, explains the physician, if patients would present themselves for a diagnosis before it is too late. But we have learned from our research workers that abnormal urinary states with indefinite symptomatology precede the typical and hopeless symptomatology by many months. As a matter of fact, these patients *do* present themselves for treatment in the curative stage in a very great number of instances; and I hesitate not to place the responsibility upon the shoulders of the physician rather than the patient. While we treat our patients for headache, indigestion, insomnia, neuralgia, and the many indefinite symptoms, the kidneys are being slowly eroded away by a urine in which can be demonstrated with ease poisonous organic acids, high ammonia, falling urea, the indicans and the first evidences of retrograde changes—the faintest trace of serum albumin and occasional renal cell or hyalin cast—all these at a time when proper remedial measures would not be in vain.

And when the typical edemas, dyspneas and psychoses appear, it is too late for correction.

Do not forget the urine when diagnosing: do not forget the urine when treating.

Do not forget the uranalysis in nephritis. Do not forget the uranalysis in any of the minor disorders which may be but warnings of the hopeless Bright's to follow.

In 1857, Barclay made the following remarks: "When inquiring with some minuteness into the changes which urine undergoes, we will find that in very many instances its abnormal states are dependent on diseases of distant organs, by which the function of the kidney is merely interfered with." The proposition is not a new one.

And it is for the correction of these abnormal states I make my plea, for in their correction lies our sole hope of curing nephritis.

CONGENITAL HYPERTROPHIC STENOSIS OF THE PYLORUS.*

FLOYD B. RILEY, M. D.,
CHICAGO, ILL.

Historical.—Although earlier papers upon the subject of congenital hypertrophic stenosis had been written it remained for Hirschprung, in 1887, to set forth the modern conception of this interesting anomaly, by the report of two cases. Hirschprung was the first to direct attention to the fact that the pathology of the condition is essentially a muscle hypertrophy and not usually a change in the submucosa. Finkelstein, in 1896, was the first to call attention to the palpable

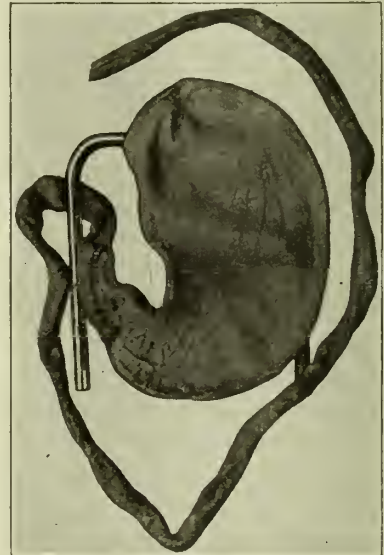


Fig. 1. Congenital Hypertrophic Stenosis in a Child Two Months of Age.

tumor in these cases. The first case operated upon was by Stern in 1897. The second, though the first American case, was operated on by Willy Meyer in 1898. The first successful operation was performed by Löbker in 1898. Cases have been reported with increasing frequency during each succeeding year so that up to date there are over one thousand upon record and no doubt the files of many hospitals contain records of many more unreported.

Embryology.—There is nothing in the embryological development of the stomach to explain this lesion. However, during fetal life, the py-

*Read before the North Shore Branch of Chicago Medical Society.

lorus is relatively larger and firmer than it is later.

Etiology.—Male infants are more often affected. It occurs more frequently in the breast-fed. Ibrahim has noted severe gastric disturbances during pregnancy in the mother. Relative to age incidence, the onset of the first important symptom is about 25 per cent in the period from one to four days, 25 per cent in the period from four to fourteen days, 25 per cent in the period from two to three weeks and 25 per cent in the period from three to six weeks. After the eighth week it does not occur in typical form. There is much difference of opinion among the authorities as to the real pathogenesis. Some of this difference of opinion is based upon good sound reliable observation and study of cases clinically, surgically and at autopsy while more is based upon the pliable imaginations of the observers. The question of pathogenesis is very much unsettled and until definite reliable experimental work is brought forward, the question must be left open. Many have said that spasm may lead to hypertrophy, but there is no absolute proof of this either in physiology or by experiment. Hyperchlorhydria is often present, but that it is not a causative factor is proven by the fact that it may persist after recovery is well started. Hess has been able to produce visible peristalsis in the new born by placing 2 cc. of .4 per cent. hydrochloric acid in the stomach. Hypertrophic stenosis has been observed in a seven months fetus and in the new born and is undoubtedly a congenital condition. Thomson considers it a form of local gigantism and has found other similar conditions such as hypertrophy of the ureters and bladder. In about four per cent of the cases congenital anomalies are found elsewhere in the body. There is no experimental evidence of value for the etiology of this condition.

Pathology.—In the true Hirschsprung's type, the local pathology consists of a cylindrical-shaped, firm, resistant structure in the region of the pylorus measuring two to three cm. in length and one and one-half to two cm. in thickness. In typical cases it is well demarcated from the stomach and duodenum. Upon section, the structure is seen to consist mainly of two hypertrophied muscular layers, i.e., the circular and the longitudinal. Occasionally, but not usually, there may be some increase in the fibrous tissue between the muscle layers and of the submucosa. The mucosa

within the lumen is thrown into deep longitudinal folds, but at the entrance to the lumen the mucosa of the stomach is thrown into deep irregularly arranged or annular folds. The serosa over the tumor is unchanged. The entire stomach wall is often somewhat thicker than normal and more rigid. The mucosa is very rarely ulcerated or markedly hyperemic. If the stenosis is complete, the intestines are empty and small. The Hirschsprung type should not be confused with the continuously contracted pylorus described by Pfaundler. Such systolic contractures occur in the pylorus of healthy infants and may persist at autopsy. The Hirschsprung type is to be differentiated by the greater thickness of the musculature which is a real hypertrophy and by the fact that an antrum-systolic stomach will usually relax under pressure of 30 cm. of water pressure. Other less important differences are to be noticed.

Symptoms.—The three most important symptoms are vomiting, visible peristalsis and palpable tumor, occurring in this order of relative frequency. The onset of the vomiting is usually sudden. The mother can usually state the time. It may be initiated by nursing or the taking of a cathartic. It is often projectile, persistent and unresponsive to ordinary treatment. The vomitus usually contains no bile though a few cases have been reported in which there was bile. Hyperchlorhydria may be present. Retention of stomach contents is demonstrated by passage of the stomach tube. In consequence of the persistent vomiting other symptoms follow, such as deficient defecation with starvation stools, progressive emaciation and sinking in of the abdomen, but with bulging of the epigastric region. The onset and character of the vomiting is a very important symptom and is almost invariably present. Visible peristalsis is said to occur in about seventy-five per cent. of the cases. The wave begins in the left epigastrium underneath the costal margin and travels slowly toward the right. It may have a duration of about thirty seconds and ends in a stiffening or contracture of the stomach wall somewhat resembling the uterus in labor. The waves are best elicited during or after nursing and do not entirely disappear during sleep. This symptom begins to disappear as the child begins to gain in weight. Hess has seen visible peristalsis in classical form where neither clinical history nor picture of real stenosis were present.

Palpable tumor is estimated to be present in about one-fourth of the cases. The firm cylindrical tumor is felt to the right of the vertebral column and midway between the umbilicus and costal margin. If the element of spasm is marked, the tumor may be felt to relax under the palpating fingers. However, the degree of hardness, and permanency does not give a proper idea of the degree of stenosis and should not be used as an indication for operation. Upon removal of stomach contents with the tube, large quantities can always be obtained in four or five hours and in exceptional cases up to ten hours, unless vomiting has emptied the contents previously. Hyperchlorhydria has been found in some cases and achylia gastrica in others. The pepsin and rennet ferments have not been found below normal.

Diagnosis.—Attention should be given to a scrupulous examination of the stomach in a well nourished infant six weeks or under, which, while taking the breast or afterwards exhibits signs of gastric distress, vomits continuously and often in a projectile manner. Some of the less frequent signs and symptoms such as palpable tumor or visible peristalsis may be present and thus aid in the diagnosis. Withdrawal of the stomach contents four or five hours after nursing will show retention if vomiting has not been too severe. The passage of Hess's duodenal catheter becomes a great help in determining the degree of stenosis. Thus far the true hypertrophic stenosis only has been discussed, but in the final diagnosis the degree of stenosis, and as far as possible the element of pyloric spasm whether alone or superimposed upon a hypertrophy, must be determined and it is here the Hess catheter becomes of value. The catheter is passed through the esophagus into the stomach until it meets the pyloric obstruction. If the pylorus is patent and the stenosis due largely to spasm, there will finally be a giving way and the tube will then pass into the duodenum. If there is a rigid hypertrophied pyloric ring the catheter cannot pass. Then a diagnosis of congenital hypertrophic stenosis of the pylorus of high degree becomes practically certain. Upon the relationship of hypertrophy and spasm the authorities differ. Some do not believe that spasm plays much if any role in the true Hirschsprung type. Others believe that whatever the final anatomical result, the initiation of the whole process was by spasm. Others, notably

Holt, believe that spasm is always superimposed upon a hypertrophy. There are proofs that spasm of the pylorus may produce the symptoms of stenosis without hypertrophy. Whether spasm plays a role in the cases of hypertrophy, is not such an important point if only the degree of stenosis permits of determination.

The x-ray studies are more apt to mislead than to be of value unless studies are made with reference to the position of the catheter before and after it has passed the obstruction.

Prognosis.—The outcome of any given case will depend largely upon the degree of the stenosis and also upon the early recognition of the condition with immediate institution of the proper relief measures that are indicated. In the hands of Richter, a surgeon, there were nineteen recoveries out of the twenty-two cases operated upon. Holt in a series of fifty-five cases lost 55 per cent. Lewis and Grulee report five recoveries out of six cases operated upon.

Treatment.—The treatment will also depend upon the degree of stenosis for its guidance. Many cases have a tendency to recover without radical interference of any sort. The medical management should be directed toward allaying the irritability of the stomach and lessening of vomiting by stomach washings and regulation of the feeding and as the tolerance of the stomach increases, to gradually increasing the amount of food. It is most likely that wherever the duodenal catheter can be passed, medical treatment will suffice.

An operation should be performed if the child is emaciated and does not respond within a few days to medical treatment. When the duodenal catheter can not be passed and emaciation is rapid, surgical measures must be instituted. Also if the vomiting persists in spite of all medical treatment, surgical interference is indicated. The various surgical procedures are limited to three, viz: Anterior and posterior, gastro-enterostomy and pyloroplasty. When the condition of the child is not too precarious most surgeons prefer posterior gastro-enterostomy, which of course, should be performed with marked rapidity.

In the cases which have been successfully operated upon by any one of the above methods and the child has come to autopsy for some other reason at a later period, the thickened pylorus has remained practically as it was and non-func-

tionating. Lewis and Grulee have recently reported such a case which lived and thrived for about 280 days after operation. There was no diminution in the thickness and firmness of the hypertrophied pylorus at autopsy.

4404 Magnolia avenue.

THE EFFECTS OF THE HARRISON NARCOTIC LAW AS OBSERVED IN THE JACKSONVILLE STATE HOSPITAL.*

T. G. McLIN, M. D.,

Secretary Morgan County Medical Society; Physician Jacksonville State Hospital,

JACKSONVILLE, ILL.

In reviewing the literature I do not find any statistical data showing the effect of the law regulating the sale of opium and its derivatives. Our patients come from the counties in the central part of the state, including the cities of Springfield, Decatur, Quincy and Alton. The large majority of our patients come from small towns, especially the better class of patients. It would be expected that in a charitable institution we would get a large percentage of poor and ignorant class of people, although patients are given the privilege to enter under assumed names and assured that their identity would not be made public. It being urged by the governor of Illinois that the hospitals make every effort to care for the unfortunates who were caught by the Harrison law and the judges of the various counties were instructed to send such patients to the institutions as voluntary patients.

I will give a brief history of the patients in groups, and not a detailed description of individual cases, except a few special cases which I will describe more definitely and give part of their history. This report is limited to cases admitted during the first two and one-half months after the law went into effect, and as my individual care of patients was limited to the female patients of this institution I speak in particular of these and refer to the male patients later, only in comparison when summarizing the contents of this paper. As the patients mostly came alone or were brought by the sheriff we had to depend a great deal on the information given by the patient.

The first case was admitted March 3, 1915. She was distinctly a defective individual and was committed by the court, but released about four weeks later by the request of a friend with whom she had been staying. The second, admitted March 7, was also committed by the court, having been a patient in this institution about 20 years ago. Her trouble at this time was evidently due to her inability to secure morphin, which she had been using about a year. On March 9, we received our first three voluntary patients. There were 74 cases admitted from March 1 to May 15, including the two above mentioned and one other committed by the court. The others were voluntary patients who made application to the court and were committed as voluntary patients. The 71 voluntary patients I have summed up as follows:

Three were apparently quite intelligent individuals, but not only addicted to the use of morphin but used cigarettes and alcoholic liquors moderately, and all were distinctly of a low moral standard, for the reason that they wanted to be or as they said, did not choose to be otherwise. Two were single, immoral in character, one had two illegitimate children, the other had one. Ten were extremely poor, evidently of low moral standard, at least the character of most of them was very questionable. Their clothing and body in a filthy condition when admitted. Several of them had many pediculi capitis. One was sentenced to jail for 60 days for selling whisky. She was fairly intelligent. She was sent here as a voluntary patient until she got over the worst of her trouble and then returned to the jail. One was a defective girl, less than 11 years of age. Two were colored and also quite ignorant. Sixteen of them were apparently intelligent, most of them clean when admitted; actions quite variable, history very unsatisfactory. Some of them very much confused and in poor health when admitted. Improvement very slow. Some came under assumed names. Most of them very troublesome and fault-finding. Some acted as if they should be able to buy the earth for a \$5.00 bill. Twenty were a fair class of hard working people. Most of them apparently began using the drug for some real physical pain; the majority of them apparently not knowing what they were using at first, and later began buying the drug at the drug store. Eighteen were of a fair

*Read before the Jacksonville Medical Club, May 22, 1915.

social standing, better educated than the group above, and all gave a feasible excuse for having become addicted to the use of the drug. About half of them were extremely nervous, hard to please, wanting special attention in every way possible, although they seemed to try to be agreeable. The youngest was a child of not quite 11 years, the oldest 82 years. The average age when admitted was 39 years. The lady 82 years had used morphin 45 years. The average number of years the entire group had used morphin was 13 years. The average age when they began using the drug was 26. Most of the cases used morphin straight, two used heroin tablets, size not known, about 40 tablets daily for each one. They were sisters. One used morphin, $\frac{1}{4}$ grain and atropin, $\frac{1}{50}$ grain, 10 hypodermic tablets, daily. Two used gum opium and two laudanum, one paregoric, and one had used heroin but changed to morphin. None used cocain.

It is interesting to note some of the family relations of various patients admitted. In one group we have seven. Only five were blood relation. Three sisters and two children. The grandmother who died before the law went into effect had used morphin for many years and died at the age of 84. She has four living children, ages 60, 56, 44, and 40. Sometime after the birth of the second child the mother began using morphin and consequently the two younger children became addicted to the use of the drug in utero. Both were patients in this institution and each had one child who was a patient at the institution at the same time. Their older sister was also a patient here but she began using morphin at the age of 34, this being our fifth patient in the same family. The oldest child never used morphin, but his wife and a sister of hers began using morphin several years ago. There are other groups as follows: Two men and their wives; mother, son and daughter-in-law; two other groups of mother and daughter; two other sisters besides the ones above mentioned; a step-aunt and her niece.

The question naturally arises, why did these people begin using narcotic drugs? Twelve of them do not claim to have received the drug by prescription or 15.6 per cent. of the 74 patients above mentioned. Although I recognize my information is unreliable regarding why these people began using the morphin, I am convinced that a

large percentage of them began using the drug by prescription, a large number of them mentioned the name and address of the physician who first gave them morphin. One patient states that the physician furnished her with morphin for three cents a tablet. She had used the drug moderately for 17 years. One patient states that the physician gave her medicine for pain in the abdomen, three or four powders daily, and continued giving her these powders ever since, making them a little larger later. She said by the use of the powder she seemed to improve and she took them regularly, always being prescribed and put up in individual powders by the physician. When she didn't take them she felt worse and after she had taken the powders for over a year she said that she told the physician that she believed that medicine was getting a hold on her so she could not do without it. She said the physician told her that after she got stronger she could quit using it. About March 1 he informed her he would have to quit giving her the medicine and advised her to discontinue the use of it gradually. She was furnished powders until the time she came to the institution. I could cite other similar cases which would indicate that the medical profession is responsible for some of these patients becoming addicted to the use of morphin.

There are many conditions for which the drug was first used; pain following operations was the cause given by eight of the patients, this being the largest number assigning the trouble to the same cause, being 11 per cent. of the 74 cases. We have about an equal number who have had major operations, but who did not begin using morphin at that time. The next most frequent cause mentioned was stomach trouble; third, female trouble; fourth, rheumatism. Other conditions mentioned, abscesses of the breast, nervousness, injury by a fall, bowel trouble, miscarriage, sick headache, typhoid fever, asthma, peritonitis, neuralgia, and toothache, neuralgia of stomach, change of life, "misery" in side.

There seems to be a general opinion blaming the individual for continuing the use of the drug. Probably in many cases they do form the habit without much thought, but in many cases they use the drug thinking they will quit when they get to feeling better, and they gradually become slaves to the habit and have not the will power to stand the pain and

discomfort due to the withdrawal of the drug. Although they make more noise and act worse when the physician is near, I am convinced that the pain is terrific and very few, if any, who have become fully saturated with morphin could withstand the withdrawal of the drug if it were within their power to get it. For instance one of the best appearing patients we had was very determined not to complain; she never made a complaint until about 52 hours after the withdrawal of the drug and then she came to the examining room and begged, then demanded me to give her some morphin, saying she could not stand it through the night, that she would break the medicine case if I did not give it to her. When told that she could not get to the case and if she did there was no morphin there, she continued begging in a pitiful manner.

The symptoms in all the cases were more or less variable yet quite similar. I will give the usual symptoms of cases who have used the drug quite regularly and heavily, the drug being discontinued at once on admission. The usual case begins to get nervous 18 or 20 hours after their last dose of morphin. A few hours later they begin feeling very nervous and nauseated, complain of pain and discomfort about the abdomen, later nauseated and vomiting, sometimes in a few hours, often several hours later. Besides discomfort about the abdomen they all seem to have a psychic disturbance which is referred to where they had trouble years ago, often in their operative scars. The nausea and vomiting usually lasts from about 24 to 48 hours, sometimes longer. The diarrhea generally ceases about the same time but sometimes continues longer and needs special attention. None of them sleep much after the first night for several nights. Their expression is one of extreme agony and they describe their discomfort as excruciating pains throughout the abdomen and sometimes also in their limbs with general aching all over their body. Several of them have severe major convulsions. Some of them pitch themselves head-first from the bed to the floor with apparent suicidal intent. Nearly all of them have their knees and elbows rubbed until they are inflamed from turning about their bed. One patient had marked tonic contractions of the muscles of her extremities, her fingers and toes being partially flexed and her whole body rigid, her pulse very full but rapid. Her whole

chest jumped with each heart beat, the patient saying she felt like her chest was being crushed. I was called to see her about 6:00 a. m., and she was immediately put in a continuous bath and she began improving in twenty minutes and in one hour was fairly comfortable except discomfort about her chest, which she had had for two days. On account of the condition of her circulatory system she was given tr. digitalis at once. Five or six hours later she was comfortable and had no special trouble afterwards, the digitalis being continued for several days. After two or three days from the onset of their misery they generally feel quite easy but nervous and sleepless, and for several days have more or less pains at night. The most of them sleep fairly well after four or five nights and are able to take nourishment better and generally want to go home; within ten or fourteen days nearly all of them feel quite well. On account of being voluntary patients we are unable to keep them as long as we should. Most of the later cases we received had reduced their drug before coming, several of them entirely out for a few days. Although their symptoms were not so severe they were similar to the others in a milder form, not quite so sick, but more nervous on account of the gradual loss of the drug, with no appetite and loss of sleep and I think as a rule were in a worse condition one week after admission and further improvement more slow, than the others who had the drug taken from them all at once. We have a history in several of the cases where there was a cessation of the menstrual periods for many months, and sometimes years after they began using the drug.

The treatment was altogether symptomatic and as above stated, withdrawal of the drug at once. In one case I considered it necessary to give her some morphin one night only. She was in extremely poor health when admitted, arteries very sclerotic, and had three severe convulsions the second night after admission with only a slight intermission, another about the time she was given the morphin and two other lighter ones later during the night. She recovered and is still in the institution at the close of this report, May 15, 1915, and is in better health than she had been for a year previous to admission.

Most cases were given a cathartic when admitted. Some were not and the vomiting and bowel evacuation were about the same in either

case. All were given a gastric tonic, some a little bismuth and soda. I gave them a mild laxative digestive mixture, as they began to improve. The one thing which gave the most relief was the continuous bath. On account of our bath equipment not being sufficient to care for our regular insane patients and the large number of morphin cases, I could not use the bath as much as desired. Many of the patients begged to return to the bath tub; some of them though distinctly benefited by it did not like to take the treatment. Most all complained of the neutral pack, especially during the worst stage.

I wish to say a little more in favor of the immediate withdrawal of the morphin in contrast to gradually decreasing the dose. The cases with gradual withdrawal become nervous, appetite poor, lose sleep and consequently recovery is slower and it takes much longer for them to build up after the drug is entirely withdrawn and in an institution where we receive them voluntarily and have to release them by their own request and cannot keep them long enough, I believe we can release them in much better condition than if we reduce the dose gradually. Some of the people fear they will die. We try to guard against that by watching the cases carefully. I was only alarmed in two cases—one as above mentioned got morphin and the other one also mentioned above was given continuous bath. We have had no deaths and none at present in serious condition.

The treatment that is most important depends on the general practitioner after they are released from the hospital. If the patients are released in good condition and they go out and are given morphin even though it is only a few doses, it is sufficient to upset the individual and bring back the craving for the drug. We have two cases that were readmitted after they had been discharged from the hospital. One of them was returned in about the same condition as when she left the hospital because her family and her physician would not permit her to have any morphin. The reason for her return was because she left the institution too soon, was extremely nervous and could not endure the surroundings and responsibilities at home, failed to sleep, and improper care caused her to have quite severe pain and discomfort, probably due to digestive disturbances. A physician was called to see her and instead of giving her morphin to tide over her present condition

she was advised to come back to the institution and remain until she got better. The other was taken out by a court official to attend a trial at which she was a witness. According to her statements she was given morphin by a physician on request of the legal authorities so that she would be stronger to endure the trial. After the trial was over she was released. Being an individual subject to an occasional drink of alcoholic liquors and unable to get morphin she resorted to the use of whisky and was intoxicated when readmitted. Whether or not she would have used alcohol if she had been kept away from morphin after she left the institution, I am unable to determine, but I am certain that the worst thing that can be done to these people, especially the ones who are so well pleased to be able to get along without morphin, is for the physician to prescribe medicine containing any form of narcotic drug. The patients following the withdrawal of the drug are left with digestive systems in a condition to be easily upset, and therefore they need proper regulation of diet, with the administration of such digestive or general systemic tonics as is indicated in the individual case.

As to the future of these patients, I can only judge by the cases I have been able to observe. The ones we have kept the longest were gaining rapidly when they left the institution. Patients previously admitted to the institution as insane, but also subject to the use of morphin have improved in their physical condition and in a few months show practically no effect that could be attributed to the use of morphin.

In conclusion: From March 1 to May 15, 1915, seventy-four female patients were admitted to the Jacksonville State Hospital; three committed by the court, seventy-one voluntary patients. During the same time there were thirty-nine men admitted; one regularly committed, thirty-eight voluntary, making a total of 113 cases. During March there were sixty-two, twenty-one men and forty-one women. April, forty, fourteen men and twenty-six women, and the first half of May only eleven, four men and seven women, showing a gradual decrease of the number of cases admitted, almost twice as many women as men, and about the same proportion each month.

Eighty-five per cent. of the women claim to

have received the drug by prescription until they got to using the drug. Over 50 per cent., history quite reliable, would show that the indiscriminate use of morphin by the physicians is responsible for a large percentage of our morphin habitues. A larger percentage of the men began using the drug without prescription.

Treatment: Immediate discontinuance of the drug, catharsis the day admitted, hydrotherapy, preferably continuous bath, and other remedies as indicated in the individual case, with a mild laxative digestive tonic during convalescence.

EMPHYEMA, THROMBOSIS AND EMBOLISM WITH SUDDEN DEATH FOLLOWING LAPAROTOMY. CASES REPORTED.*

F. C. SCHURMEIER, M. S., M. D.,
ELGIN, ILLINOIS.

Complications of laparotomy are by some authors classified in order of frequency as follows: Shock, hemorrhage, infection of external wound, peritonitis, intestinal obstruction, pneumonia, bleeding of alimentary canal, thrombosis and embolism. Empyema may be placed here although the order in which it should be named may admit of some doubt.

The theme is such a broad one that we have not the time here to consider it exhaustively. Only two of the complications of celiotomy will engage our attention here, and these I have chosen because of recent experience with them, namely, empyema of the pleural cavity, thrombosis and embolism with sudden death. Embolism and thrombosis are here considered clinically as one.

Empyema of the pleural cavity has followed operations high up in the abdomen, as for example gall bladder, liver or kidney abscess. In short septic processes requiring operation in juxtaposition to the diaphragm produce probably a large number of these complications. At any rate one would think such to be the case because of the greater absorbing faculty of the upper peritoneal regions. The extension may be direct or by the way of the lymphatic and the vascular systems. The apparent relation of tonsillar disease to focal infections elsewhere in the body has

certainly been observed by many. The permanent relief from pain in the appendiceal region after complete removal of the tonsils and adenoids in patient 20 years old, was my observation in the year 1912. At first it seemed a coincidence, but when over two years later the patient informed me of the absence since the operation, of the former symptoms I began to think that in this case the real trouble maker had been removed, although at the time the tonsils were removed because they caused local trouble. It is of interest to here note that in one of the cases reported below, the patient primarily had an attack of acute tonsillar infection. There is nothing new in these observations, but they are stated here to all the more vividly direct our attention to the possible avenue of infection sometimes overlooked.

Considering the infections of the serous cavities, there is always the probability that they have antecedents, such as simple pleurisy. This is particularly the danger in young adults and children. Hirana in the Hozu Hospital of Japan, reported 118 cases of empyema from all causes, 93 of which occurred in children under fifteen years of age. It occurred on the right side 71 times as against 47 on the left.

Gage in the *British Medical Journal* of April, 1907, reports two cases in which suppuration in the thoracic cavity followed shortly after an attack of appendicitis.

The first case was a man 45 years old, with signs and symptoms of effusion in lower part of right chest. Pus was evacuated, having a distinctly fecal odor.

The second case was that of a child six years old. An appendiceal abscess was opened, the appendix removed, wound drained. There was no evidence of abdominal infection and the patient progressed nicely until the third day, when right sided pneumonia developed. One week later all signs and symptoms disappeared, patient sitting up, when the temperature returned associated for the first time with abdominal pain and tenderness. The child died 31 days after the occurrence of these symptoms. The autopsy revealed bilateral empyema with an abscess in the right lung, and a general suppurative peritonitis chiefly noticeable in the upper part of the abdomen. The region about the appendix was thoroughly healed and not even infected. He cites another case in which the left side of the thorax was primarily involved from the extension of an subphrenic abscess on the left side. Five days after the onset of the disease the patient was operated on and a perforated gangrenous appendix removed. The outcome of this case was not stated.

*Read before the joint meeting of the McHenry, Boone, Kane, Winnebago and Stephenson County Medical Societies, at Rockford, Ill., Feb. 9, 1915.

Two cases have recently come under my care:

Case 1. Edward G. Aged 17 years. On Dec. 19, 1913, the patient was found with the usual symptoms of appendicitis. Operation was advised. The parents were undecided. On the following day we had counsel. The diagnosis was concurred in and an operation, after a little waiting, was advised. The patient was taken to Sherman Hospital in the ambulance. Blood count showed marked leucocytosis. On the same day, Dec. 20, under nitrous oxide gas, oxygen and ether, a large abscess containing a large gangrenous appendix was opened. I removed the appendix. A large fecolith had sloughed through. Drainage. The temperature dropped. Five days after the operation patient had epistaxis. On the sixth day the temperature began to rise; respiration averaging 22. On the eighth day epistaxis; afternoon temperature 103 with morning remissions. Widal negative. Tenth day at noon temperature by mouth 104, pulse 116, respiration 32, pain about the wound. On the twelfth day temperature again receded, urine negative. On the next day a second widal proved negative but doubtful. The temperature dropped to near normal on the fourteenth day, no cough, respiration 26, pus revealed by aspirating right thorax. The pus was of the same character as that in the original abscess, i. e., the colon bacillus predominating. The sixth rib in axillary line was resected, pus slowly evacuated, and the cavity drained. Up to this time there was no cough, no complaint of pain in chest, no bulging of the interspaces. In spite of free drainage the temperature was slow to subside. About the twelfth day the temperature being nearly normal, the pulse and respiration, however, remained considerably above normal. By this time the patient had the second skin eruption, urticarial in all its manifestations, lasting each time only a few days. On account of the fetid odor of the chest wound, it was lightly irrigated with Thiersch's solution. The abdominal wound was completely healed by the twentieth day. An x-ray taken of the whole chest showed a cloudy or light area on the right side at about the junction of the lower with the middle lobe. Under nitrous oxide and oxygen gas the wound was explored with the gloved finger and the pus sack in the lung tissue nearly opposite the drainage opening broken. The character of the pus was thick, viscid grayish yellow. Wilson tube inserted. The patient was for a time after the rib resection made to blow the water from one bottle to another several times each day. The patient made a good recovery in about three months. Naturally a part of the lower right lobe being destroyed there is a defect. The movements of the lung and its capacity are nearly normal, as near as can be determined by the usual tests. In getting the history in this case the interesting fact was disclosed that one week prior to my first visit the patient had an acute attack of tonsillitis.

Case 2. Referred by Dr. Frank Maha, who kindly furnished the clinical history. Male, aged 7 years; poorly nourished. On May 7, 1914, the patient was

taken with chills, and complained of sore throat. In 24 hours pain in left hypochondrium radiating to the umbilicus, sharp shooting in character causing the child to cry out; vomiting several times; constipated. Temperature 102, pain continued to increase in severity; knees flexed. In 48 hours the pain localized over McBurney's point. Diagnosis, appendicitis. Operation within a few hours. Upon opening the abdominal cavity a stream of thin serous slightly creamy fluid escaped; general inflammatory condition of appendix and surrounding tissue. Temperature 99 on the third day, patient doing well. At the end of ten days the temperature began to rise. Morning temperature 99, evening 103; slight chilliness, some diaphoresis, pain in lower left thorax; a slight hacking cough. This condition lasted for a week, at the end of which time slight dullness developed over left lung, moist rales, no bulging. On May 18, the chest was aspirated, and pus found; diagnosis, empyema. The patient was at once prepared, and the sixth rib resected, releasing about a half-pint of creamy pus. The cavity was drained with a double tube. Marked improvement followed, the temperature falling. Drainage tubes removed and the temperature was normal at the end of three weeks. Patient made a complete recovery and is now well and robust.

Reverting now to the subject of thrombosis and embolism, we find that the literature ascribes to them a mortality extremely high. Mikulicz's, in a series of 1,781 laparotomies found 143 complicated with pneumonia, and that thrombosis and embolism played some part in the casual relation in bringing about a mortality of fifty per cent.

Glynn and Knowles reported in the *British Medical Journal* of November 5, 1900, twelve hundred autopsies in which they found thrombosis occur more frequently than embolism, a ratio of 8 to 1. Thrombosis occurred eight times as often as embolism and generally proved fatal very suddenly about the third week after laparotomy. The symptoms of the two, these authors say, are practically the same. They came to the conclusion from their findings that cases of thrombosis are often overlooked because it is generally supposed that embolism only, can cause sudden death by damming up one of the pulmonary arteries. Bull reported in 1912, 118 cases of fatality, 11.7 per cent. of which showed evidences of thrombosis.

Recent literature has been considerably enriched by accounts of this interesting complication of abdominal surgery. Johnson reported a case of thrombosis of the left common iliac vein occurring six weeks after laparotomy; patient re-

covered, although empyema of right side complicated the case.

Johnson made the following observations, quoted almost verbatim:

Thrombosis and embolism occur in a pretty large number of cases, perhaps in 1 per cent. of the abdominal operations. That it occurs after appendicitis more often than any other operation. That it rarely follows operations for acute appendicitis with abscesses, peritonitis or other acute lesions. It usually follows clean interval cases during convalescence, with the general condition of patient good and wound healed by primary intention.

For reasons not at all clear it occurs on the left side of the body in all but a very small percentage of cases. It is rare before the end of the first week. It occurs as late as one month after operation. These observations relate generally to the common iliac artery. A few cases are preceded or followed by pulmonary embolism. In some cases there are no symptoms except sudden instant death. A patient may suddenly be seized with intense precordial distress and dyspnea, and that progressive heart failure may end life in a few minutes or hours.

Trendelenburg reported a series of thirteen cases of pulmonary embolism in all of which surgical treatment was not successful. I found two cases reported elsewhere where surgical intervention removed the obstruction but patients died. I found no case of pulmonary embolism where operation was successful.

A case of sudden death:

In a female, aged 30 years, referred by Dr. Thos. Macauley, we witnessed a calamity, the result, as we believe, of pulmonary thrombosis or embolism. Patient was operated on for the removal of the appendix and both tubes. It was a surgically clean case, no free pus being present. The patient stood the operation well; saline, by the Murphy method, was given. Her condition up to a few minutes before her death was all that could be desired; she was making a splendid recovery. On the sixth day after the operation I happened to be in the hospital in the evening. The patient was feeling fine, enjoying a glass of milk. No sooner had she finished with her repast, when she gave a loud shriek. I was called at once by the attending nurse, and saw the patient within a few seconds, found her clinching her chest with both hands, dyspneic, cyanotic, face contorted, shrieking at short intervals. The pulse became rapidly weaker, irregular and stopped. The patient at no time previous to

the operation showed any cardiac lesion. There was no autopsy on this case.

Bush in the *Deut. Med. Wochenschrift* of July 22, 1909, reports on this subject among other things as follows: During four years 878 fatalities out of 9,727 surgical patients in Korte's series in Berlin, 22 of which were sudden deaths, and that the symptoms indicated pulmonary embolism. Twelve of the 22 sudden deaths occurred instantaneously and in seven of these examined, embolism was found in four. Incidentally the interesting fact was revealed that the findings in the very sudden deaths were similar to those found in the more protracted cases. In ten other patients the symptoms of embolism lasting from ten minutes to three hours before death were present, and autopsy disclosed embolism in six cases.

Bidwell in the *Practitioner* of February, 1909, as quoted by Gordon says: "Most cases of supposed pleurisy and pneumonia occurring within one to three weeks after abdominal section are probably embolic in origin."

What prophylaxis, if any, have we?

Bidwell states that we should avoid favoring thrombosis, and while advising a free use of fluids, avoid milk, calcium salts and carbonate of magnesia.

Boise considers the heart of great importance, especially its area of dullness, the weakened first sound, the greatly increased pulse rate after exertion, and other signs which in his opinion indicate heart degeneration and that when in addition to these findings the blood shows excess of calcium salts while chronic anemia exists, all the precautions against embolism are justified.

Wright, Knapp, Duncan, Illman, Boise and Krusen advocate giving citric acid in thirty-six grain doses t. i. d., alcohol and large quantities of water; whereas tobacco finds its advocate in Richards, and alcohol, oxygen, liquids and fruit juices are recommended by Howard. The early getting up of the patient is advised as a prophylactic by Mayos, Murphy, Ries, Boldt, Chanles, Gordon Currier and Brothers, whereas the opposite procedure is advocated by Tabor Johnson, who would "keep patient in bed longer, with foot of bed elevated." Still another authority says that "very few cases of embolism would occur were saline enteroclysis used more frequently after cleaning the intestines.

THE CRYING NEED OF THE HOUR.*

LAY G. BURROUGHS, M. D.,

COLLINSVILLE, ILL.

President of the Madison County Medical Society.

In attempting to present a paper at this time and upon the subject that I have chosen, I have done so not with the belief that I can advance any new ideas or enlighten your present day knowledge, but simply in my humble way to recall to mind what I believe is the crying need of the hour and upon which the future of our profession must and will depend.

Just as you consider your membership in your society of vital importance to you just so is the united fellowship of all medical fraternities, not with the idea of forming one large trust whereby we can corner the professional market but to establish a code of mutual justice and fellowship, for the hour has well nigh arrived, if it has not already struck, for the breaking down of all artificial barriers and the consummation of complete kinship between the members of our profession.

Just to refresh your memory a little bit, let me take you back if you will into the history of your own personal experiences, back to the days when you first crossed the threshold which you are proud to call your alma mater; there with your eyes firmly fixed upon the group of distinguished gentlemen—The Faculty—where it was your privilege and good fortune to be associated with that body of scientific men, to enjoy the ample opportunities afforded for studying the art and science that you possess today.

Well may we congratulate ourselves upon having this opportunity and after completing that course to be pronounced proficient and authorized by official signatures and seal of that institution, to assume the duties and responsibilities laid upon us as members of our chosen profession. However, let us not forget in assuming these duties the conduct that is incorporated in the code of medical ethics, to recognize not only our own rights and privileges, but those of others in the profession, to cultivate fellowship and friendship, to recognize the social interests of our own brother practitioner, to uphold the dignity and honor of the profession, to maintain

ethical standards and strive to promote the interests not only of the profession but of the welfare of the public, and to treat your colleague with civility and respect.

I take it for granted that in this age there is no necessity for argument in favor of organization; all that is necessary is to consider the conditions that exist in your own midst. All trades and professions seem to have learned that it is one of the fundamental factors in evolution, one of the main springs in development and progress.

This is an age of organization, the lawyers have their association, the preachers have synods and conferences, the press has a mighty association, the working men wield their union as weapons of defence against oppression, by their means they insure for themselves and their fellows a living wage. Even the barbers, the painters, the retail clerks, yea, all lines of trade, have their organizations through which they dictate their price and terms to the public so much so that you in your locality, hesitate to patronize non-union labor for fear the unionized league, through their representative, would demand an explanation, and even threaten to boycott your practice, if you did not recognize them. Is it not time then, my colleagues, that we should unite for mutual protection not only for good fellowship, but to make our profession successful financially, and to protect our brother across the street?

To the doctor, after all, money is one of the indispensables. He cannot live because people love and respect him. He cannot live even in the consciousness of superior professional ability and skill. He must sell himself for money and get the money if life is really to spell success for him. Sounds sordid does it? But it is true and the sooner every one of us learn its truth the happier we shall all be in the end.

The average doctor earns enough money, the trouble is he does not get it, his patrons have gotten into the bad habit of taking it for granted that his pockets are lined with the precious coin and that really he does not need to be paid, at least only rarely! They have to pay the grocer, the tailor, and the undertaker; they have dimes for the nickle shows and dollars for the theater, but nothing or but little to defray the expenses of bringing baby into the world.

Is this picture overdrawn, has not this condition existed in generations past, does it not exist

*Read before a joint session of the Greene County, Jersey County and Madison County Medical Societies, at Godfrey, Ill., on June 4, 1915.

today? I dare say there are those here today who could bear testimony to this fact. Let them return to their offices and give you a list of every account, where the service was actually and faithfully rendered without financial return, and I believe you would be skeptical enough to say that figures lie. Thus the failure or success of the doctor, analyzed, is a matter of cash, the finished product of the treasury.

Our profession, noble and grand as it is, after all is only a business through whose channels we work for our livelihood, and those dependent upon us, why not then strive to make it a successful business? Why should we not demand that which is right and lawfully ours?

The doctor who looks closely and carefully after his collections as he should, persistently following the people up until he gets his pay, not only is enabled to pay his own accounts promptly, thereby retaining the good will and respect of creditors, but he can keep up a good appearance, provide himself with the best medical text-books and increase his professional equipment so as to keep abreast with the progress of medicine, all of which attracts the eye of observant people. These are conditions that exist today and conditions that we must in some measure meet.

This then brings us to one of the essentials of efficiency in medical organization, namely, cooperation. This calls for union in its fullest sense, union in efforts, of sympathy and of interest. It calls for whole-hearted assistance, not lip service; it means the obliteration of petty jealousies and quarrels and the inauguration of an era in which the success and honor of one becomes by reflection the pride and glory of all.

I know of no means of maintaining such a spirit of union more effective than the regular attendance of the meeting of the local medical societies. The frequent meeting with one's fellows serves to acquaint us with each other's follies and peculiarities, be they strong or weak, it aids in smoothing off the sharp angles and destroys the feeling of distrust in the other's capability, or suspicion of the other's motives and methods when such exist. Besides, each one of us has much to learn and may have something to teach, so it is vital to your interest, that we doctors should maintain an efficient organization.

Do we not see that we are surrounded by hostile influences, unscrupulous and half-educated pretenders brazenly proclaiming themselves especially qualified to heal the sick and afflicted, and their vile behavior throws a shadow on the reputation of the whole profession. They rob the people at every chance and the ethical doctor bears part of the blame. No single arm can cope with such quackery and bring the malefactors to justice; it requires the united and combined influence of the medical profession to induce state legislatures to enact laws to stop such practice.

I repeat there is a great work before the profession in bringing about some needed reform, and in protecting the people against the hollow shams and mockeries, that are being perpetrated upon a credulous public by the charlatans of today.

Truthfully was it said in years past, "We must educate or we must die," and this certainly applies to conditions of today. Because of the indifference on the part of the profession to educate the public mind, and the lack of close professional ties, stronger bonds of fellowship, we have seen spring up around us unreasonable pretenders, irresponsible cults and irrational systems, that have deceived the indiscriminating public by their chicanery.

How many of you have witnessed the medicine man with his accompanying comedians stationed on the streets before your own eyes and there, with his gift of gab, induce the illiterate to purchase his nostrums guaranteed to cure all ills and lead them to believe that they have found the fountain of health only to awake later to the realization that they have been stung and that the medicine man has taken French leave?

How long, my colleagues, are we going to permit these transgressors to infringe upon our rights? Is it not possible that we could instruct our city officials along matters pertaining to the health and welfare of its citizens and encourage them to reject all, unless clothed with the proper credentials? As the time is passing, let us take some thought of ourselves. How often has it been said that there is more jealousy and ill feeling among doctors than any other profession? Granting this to be true in a large measure, yet I must say that there are physicians, who work hand in hand, always taking an active

interest in all society proceedings and there gain the confidence of each other, confidence in the other man, to feel that he will always befriend you, be always willing to assist you rather than hinder your progress. But how are you to have confidence in your brother practitioner if he will not sacrifice some of his time to meet you at your society meeting and there assume his share of the burden imposed upon him?

I say without fear of criticism that every member of this society owes something (not money) to its support. Your very presence in meetings has a wonderful influence. Jealousy and petty feelings do not exist between active members of the profession, but I look with fear upon one who is so busy that he can not leave his office five hours out of a month to attend a society meeting.

Is it not well then to remember that the old guards cannot live forever? One by one their voices are stilled, year by year their influence fades into eternity and it will soon come to pass that entirely new hands will control the helm and sail the ship. Our hope for the future lies in the loyalty and wisdom of the new members of the County Medical Society.

Considering the subject from another point of view, it appears to me that a consummation such as we have just mentioned, and so devoutly to be desired, is one worthy of not a little sacrifice of time and energy on our part. The dulcet symphonies of gentle concord are ever pleasanter than the jarring medley of strife. Efficiency then can only be secured by sacrifice on the part of each and every one of us. We must be willing to give up a portion of our time, much of our energy, and, if need be, all of our knowledge to obtain it. The sacrifice that really counts, that has an intrinsic worth, is that of whole-hearted interest; the spirit that works simply for the love of work, that strives to aid for the love of aiding, taking no heed of the fact that in so doing one will be incidentally, but none the less certainly, aided.

Has any true conscientious physician ever regretted the time spent at medical meetings where it was his privilege to be associated with his fellows, and to look into the life of some noble character, whose kindly word and inspiring thought has been a guiding star, by which to steer when the storms of calamity threaten to sweep

over him? He who does not share in these opportunities has been cheated of a potent portion of his armamentarium.

Let the weakest, let the humblest remember that in his daily course he can, if he will, shed around him almost a heaven. Kindly words, sympathizing attentions, watchfulness against wounding one's sensibilities, these cost very little, but they are priceless in value. Are they not the staple almost of our daily happiness? From hour to hour, from moment to moment, we are supported and blessed by small kindnesses.

We do not need to be told of our duties by the public, we realize them and must continue to meet them as we have always done. No one of us can cope with the tasks before us alone, each of us needs the other, we are wings of the same army, and, for the best results, must co-operate, consult together, hold up each other's hands, exchange each other's view points and work side by side.

Here is a big field for organization work, not on the basis of sentiment, but of genuine, practical, progressive efficiency.

To live! but just to live! No matter where;
To hear and see; to breathe God's boundless air;
To play in this great world an eager part;
To feel the strange I AM throb in the heart.
To live! 'Tis something more than plod and grind;
Life is a thing of spirit, soul and mind;
The reaching out and on of growing powers,
To change to higher forms of what is ours.

To the younger members of the profession, including myself as well, I want to say that whatever has been our success or our position in life, we owe to our forefathers. They, by their good example, and by their united efforts have given to us the liberties that we enjoy. Then does it not seem fitting that we should endeavor to pay back the debt of gratitude we owe them, by showing a willingness to assume our share of the duties imposed upon us by being prompt in our attendance at meetings? Remembering also that they once took the lead and won the victory for us. Let us also remember that we should respect and honor them, although their views may differ from our own but their experience, after all, is worthy of our consideration.

In conclusion, I want to apologize for consuming your patience upon a subject so familiar to us, and discussed by men more capable than I. But be this ever so true, there is yet more to

do and better things to accomplish. Let us then, for the future, expel from memory whatever has existed in the past, besiege the opportunities that are before us, and let our life and influence be such that this profession can rise up and call us blessed.

"Follow and honor what the past has gained,
And forward still, that more may be attained,
Hold fast the good and seek the better yet."

AGAR CULTURE MEDIUM.

AN IMPROVEMENT OVER OLDER METHODS OF PREPARATION.

J. E. HUBER, M. D.,
PEORIA, ILL.

Everyone who has had any experience with the making of the agar culture medium is aware of the difficulty in clearing and filtration. Many of the methods in the textbooks do not give explicit directions for the manner of procedure, consequently making it a trial for those who wish to prepare small or large quantities for their use. The greatest trouble is with the filtration, generally due to the imperfect solution of the agar.

Many advise the use of egg albumin, to be added at a later stage, so that heating to coagulation of the albumin it would incorporate the flocculent matter with it, making filtration easier. This adds to the length of the process and in many cases does not aid the conditions.

Having had more or less success with many of the older methods, experience has evolved the following short, rapid and very satisfactory method. It can be applied to a large or small batch, and anyone with ordinary laboratory experience can produce a reliable product.

Take 15 grams of good clear agar, place it in a 2,000 c. c. flask, adding 1,000 c. c. of good tap water; make a mark on the outside of the flask at the water level with a grease pencil. Allow to soak for 2 to 3 hours—one hour will do in a warm place. Then place the flask on a wire gauze and gradually heat over a burner with a wide or rose flame to boiling. This must be done carefully, so that the agar is not scorched at first. Allow agar to dissolve slowly.

Now comes the important part of the method. As soon as frothing takes place, the flask is re-

moved and given a few whirls to break down, and replaced on the burner, this same procedure to be repeated when frothing takes place.

After a time it will be found that the agar solution will boil quietly, which is to be kept up for one hour. Add

Peptone	10 grams
Sodium chlorid.....	5 grams
Beef extract.....	2 grams

Allow to dissolve, heat to incipient boiling, neutralize with sodium hydroxide solution to proper alkalinity. Add distilled water up to the outside mark.

Have ready a funnel with a plug of absorbent cotton the size of a billiard ball; pack fairly tight in the funnel. If necessary a small glass stopper can be placed on it to hold down against the funnel.

Pour the hot agar solution toward the center of the cotton slowly, allowing the funnel to become heated, then add the rest gradually.

It will be found that the solution will run through rapidly and be of a clear transparent color. There is very little waste, only what remains in the cotton due to capillarity.

The agar is then ready for tubing and final sterilization. On setting it is perfectly clear, water-white and transparent.

RED CROSS ON TAIL LAMP.

Doctors' red cross sign may be most cheaply, simply and permanently placed by blocking out the four corners of the red light in the tail lamp with white enamel. The cross shows distinctly and clearly day and night.—*J. J. G.*

WHEN PUTTING ON NUTS.

When putting on nuts and bolts it is an excellent preventive of rust to rub on them a little graphite. When this is done you have taken out an insurance policy against sticking nuts.

WASTE OF GASOLINE.

Quite often there will be an unnoticed drip of gasoline for a few minutes from the carbureter after the engine has stopped. This is not only a waste of fuel, but it is dangerous from the risk of fire. Usually this condition is due to the float not closing the needle valve opening promptly.—*American Medicine.*

ILLINOIS MEDICAL JOURNAL

Published monthly by The Illinois State Medical Society, under the direction of the Publication Committee of the Council.

GENERAL OFFICERS 1914-15

PRESIDENT.....CHARLES W. LILLIE, East St. Louis
 PRESIDENT-ELECT.....WILLIAM L. NOBLE, Chicago
 FIRST VICE-PRESIDENT.....F. S. O'HARA, Springfield
 SECOND VICE-PRESIDENT.....H. P. BEIRNE, Quincy
 TREASURER.....A. J. MARKLEY, Belvidere
 SECRETARY.....W. H. GILMORE, Mt. Vernon
 (Ex-officio Clerk of the Council)

THE COUNCIL

District 1—EMIL WINDMUELLER, Woodstock.
 District 2—EDWIN S. GILLESPIE, Wenona.
 District 3—CLYDE D. PENCE, Chicago.
 District 4—AUGUST H. ARP, Moline.
 District 5—C. S. NELSON, Springfield.
 District 6—C. D. CENTER, Quincy.
 District 7—C. F. BURKHARDT, Effingham.
 District 8—E. B. COOLEY, Danville.
 District 9—FRANK C. SIBLEY, Carmi.

CLYDE D. PENCE, *Chairman*, 3338 Ogden Avenue.

Send original articles and all communications relating to advertisements and mailing list to Dr. Clyde D. Pence, Editor, 3338 Ogden Avenue.

Membership correspondence to Dr. W. H. Gilmore, Mt. Vernon, Ill.

Society proceedings and news items to Dr. Henry G. Ohls, *Managing Editor*, 927 Lawrence Avenue, Chicago.

Contributors will submit all copy for publication typewritten on standard size paper and double spaced. Copy not complying with this rule will be returned, if convenient.

SEPTEMBER, 1915

Editorials

THE PASSING OF EHRLICH.

August 20 marked the passing of Paul Ehrlich, one of the greatest medical scientists of the present era in Homburg. To enumerate the great discoveries due to his untiring investigation would require a review of a large field of modern medicine. But it may be said that few scientists have in their life received fuller recognition. Early attracted to the minute study of the cell protoplasm he revolutionized the theory and practice of staining tissues in his "Acid Needs of the Organism," and with his "Methylene Blue Reaction of Nerve Tissue."

To account for the facts of infection and immunity he later developed his "Side-chain" theory, which also explains the phenomena of ordinary nutrition and has become the key to unlock many mysteries both in physiology and pathology.

In 1897, under the influence of this theory he issued the "Estimation of the Value of Diphtheria Antitoxin and Its Theoretical Basis." In his studies of trypanosome infections after numerous experiments he discovered that arsen-

ophenyglycin "would completely cure every kind of trypanosome infection in any kind of animal, by means of a single injection. Truly a *therapia sterilisans magna*." A continuation of the same experiments developed salvarsan and neosalvarsan than which no greater boon to humanity has been discovered since Behring's diphtheria antitoxin.

Ehrlich was born March 14, 1854, in Silesia. He was educated in Breslau, Strassburg, Freiburg and Leipzig, receiving his medical degree in 1878. From that date till 1885 he was assistant to v. Frerichs in Strassburg; 1885-1889 assistant in the medical clinic of Gerhardt, and in 1889 he became privatdozent in the medical faculty of Berlin. Assistant under Koch in the Institute for Infectious Diseases in 1890, and professor in 1891; director of the Institute for Serum Study in 1896; director of the Royal Institute for Experimental Study, at Frankfurt, in 1899. In 1898 he shared with Metchnikoff the Nobel prize for research in immunity. Governments and universities vied with each other to do him honor.

Had his life been spared it is probable that the mystery of cancer would have been solved by his genius.

PROFITABLE POETRY.

In days of old when knights were bold and warriors held their sway rivals for poetic honors were fain to compete for a laurel crown. Later, when poets laureate became an official institution, the sovereign's appointee received the munificent guerdon of an annual butt of sack on the theory doubtless that the wine would stimulate his imagination and induce a flux of verse. Old blind Milton received five pounds sterling for the first edition of "Paradise Lost" with a promise of another five if a second edition were called for. But no such paltry reward suffices the modern Pegasus. Far from it! Not when facility in turning out verse is made a requisite in securing appointments as health officers. The effete East will please take notice.

In a recent Civil Service examination for the position of Director of Publicity and Education in the Chicago Department of Health one of the questions was as follows:

"Give illustrations of your own composition

regarding public health in epigram, verse or pithy paragraph."

The result of the test was a foregone conclusion of course for who but Corwin among the applicants can exude verse from every pore? Rush alumni especially will recognize his eminent proficiency. No mere annual butt of sack for his. The payroll will provide ample supplies even if he is the "butt" of satirical comment from his envious-rivals. But it has ever been so since Ben Jonson wore the first official laurel.

Here is the effusion that helped to lift the prize.

The typhoid bacillus
Is waiting to kill us
In milk uninspected
And food that's infected
By hands unablated,
And likewise polluted
By flies' dirty feet
And the dust of the street.
To 'scape his fell slaughter
Just filter the water
Before you would drink
From the tap at the sink.
Put ban on uncleanness
And banish all meanness
Of unsanitation,
'Tis the hope of the nation.

HOSPITAL PRACTICE

The following editorial by L. D. V., taken from the August number of *The Medical Economist* is timely we think, and worth republishing:

OUR HOSPITAL "OPEN DOOR" POLICY—ITS EFFECT.

The intimate, personal relation which exists between the individual patient and his doctor is one which must be recognized and reckoned with if the hospital is to arrive at that stage of efficiency which we have the right to expect in the great humanitarian system which they go to make up. This relationship is deeply rooted in the practice of medicine and individuality and the personal equation enter largely into the success of the doctor's endeavors. It is thus readily seen that where less than one per cent of a group seek to gather to themselves the fruits of the labors of the other ninety-nine per cent there must of necessity be a great gap which cannot be bridged even by the most grasping and active of them.

It is to the general practitioner that the public first turns, and that the trust reposed in them is justified is shown by the fact that but 10 per cent of our sick use the facilities and conveniences, so-called, of our

modern hospitals. This being the case, how futile and useless for these institutions to fight against an innovation which must immediately confer a great and welcome benefit upon them in the increased confidence which will be given them, the harmonious and friendly spirit with which the general body of practitioners will meet them, and not least of all, the increased number of patients and incidentally the improved finances which will at once remove them from the alms-seeking and charity petitioners class into which they have but lately fallen more and more.

For the hospitals supported wholly or in part by public monies there can be no question that the public (and this includes the physicians as well, for they also pay their taxes and are included in the class of respected citizens of the state) should be allowed free access to their benefits. But the name hospital today has such fearful meaning to the average person that it is only by a process of education that this dread can be overcome, and who is in a better position or better qualified to carry on this process of education than the family doctor who has their absolute confidence?

Surely, if the state has qualified and distinguished doctors by granting to them their license to practice, the state has the further duty of keeping them efficient and to place them in the position to do the best work for the good of the people of the state. This can only be accomplished by opening the doors of the hospital to the rank and file. That is what we seek. That is what we have the right to expect.

L. D. V.

ACTIONS FOR CIVIL MALPRACTICE.

Twelfth Article.

ROBERT J. FOLONIE, LL. B.,
CHICAGO.

A fruitful ground for actions of malpractice which have a specially sinister quality, are those arising out of abortions. It frequently happens that a physician is called to attend cases of spontaneous abortion, and sometimes for after treatment of artificial abortions. Such cases, particularly the latter, should be examined with caution and treated with suspicion. It is advisable before even making an examination to insist upon the calling of some other physician into consultation so as to eliminate subsequent claims that the abortion was produced by the physician.

It is a matter of frequent occurrence that a woman producing an abortion upon herself, upon discovery of such fact by her husband, to shield herself, claims that it was produced by the physician who advised that such step was necessary for her health or life. While in such state of facts no right of action lies by the wife, for her concur-

rence would be an almost indispensable incident, yet an action would lie by the husband for loss of service of the wife, and such actions are often brought.

A much more serious question may arise if a fatal result occurs. For if suit is then brought, the matter may prove ruinous to the reputation of the physician, if he has no independent support for his statement that such act was not performed by him. What makes the matter even more serious is that in such case the physician can not testify at all. It is a rule of law that when a suit is brought against any person and the party to whom the wrong is claimed to have been done is dead, that in a suit by the administrator, the person sued can not testify at all. It can be readily understood what difficulties exist in making a successful defense.

Even in the most innocent situation it sometimes becomes very difficult to establish non-culpability and the safeguards to be taken must be correspondingly broad.

I believe that the rule is very general in the larger cities among experienced practitioners, not to examine any case where there is a strong suspicion that abortive means have been used, without having present some other reputable member of the profession, who can substantiate existing conditions.

The tendency of the law, by which is meant the expression of popular sentiment by legislative enactment or judicial interpretation, is becoming more and more stringent in dealing with those suspected of producing abortions without the gravest necessity.

As illustrative of this tendency, attention is called to the prosecution of a physician in Ohio under a recent statute of that state, making it a criminal offense to take any step in producing an abortion or preliminary to an intended abortion—unless its purpose is to save the life of the mother. Even the health of the mother shall not be considered any reason for taking such steps.

The physician administered an anesthetic to examine the woman to determine her condition. Her condition was apparently grave and the intention was to perform an abortion upon her if the conditions upon examination disclosed a necessity. An anesthetic was administered, and the

examination disclosed a condition not necessitating abortive means and none were attempted.

The prosecution was predicted upon the statement of the physician that if upon examination abortion would prove necessary, he would perform it and that he could not form any judgment on the matter until the examination had been made.

The case was evidently brought to test the law and a conviction resulted. The testimony of the physician was that what he would have done in the case depended entirely upon what he found upon examination and he had formed no opinion as to what means he might use, if any.

The case is reversed by the Supreme Court upon questions of practice, but the opinion holds in substance that the law is valid and that the administration of an anesthetic is one step with a view to abortion, and if such end was in contemplation the physician is guilty of a crime, unless he can show that before the taking of such means he was of the opinion that the *life* of the patient was dependent upon such operation.

The logical effect of this opinion is that even physical examinations may not be made, having in view possible abortion, unless the physician in advance has satisfied himself without an examination, that the life of the patient is at stake.

While the law under discussion is more drastic than that in force elsewhere it is indicative of the trend of the times and the interest of society in the reproduction of kind is so necessary a preservative measure that the gravity of the results to patient and society require unusual precautions in every case where such condition is involved.

FOOT AND MOUTH DISEASE.

On August 9 a herd of cattle and several hogs were found affected with foot and mouth disease on the farm of Henry Pearson, in Wheeling Township, Cook County. August 25, several cases were discovered in Vernon Township, Lake County. On August 31 there were 78 herds affected at the following locations in Illinois:

Wheeling Township, Cook County, 23; Good Hope, McDonough County, 20; Vernon Township, Lake County, 28; Wyanet, Bureau County, 3; Ponemah, Warren County, 2; Galva, Henry County, 1; Melvin, Ford County, 1.

The 23 farms in Cook County and the 28 farms in Lake County are in the Chicago dairy

district. Close quarantine is still maintained in the following counties: Cook, McDonough, Lake, Bureau, Warren, Henry and Ford. All infected herds in the State have been slaughtered except two in Lake County. Cleaning and disinfecting of infected premises is completed in about half the farms.

Dairy inspection by the Chicago Department of Health has been discontinued in Cook and Lake Counties on account of the quarantine and it is required that all dairy products from this territory be pasteurized.

(September 3 we are advised that 101 premises in Illinois are quarantined.)

TUBERCULOSIS NOTES.

Hurried examinations do not detect early tuberculosis. If half hour does not suffice, use one or two hours if necessary. It's the early diagnosis that saves life.

It is stated that after clinical onset of tuberculosis, marked hypersensitiveness to tuberculin occurs, which diminishes as patient improves, and which fluctuates or remains stationary if he does not improve.

Two out of three cases of tubercular meningitis made complete recoveries after intradural injections of tuberculin, given in doses of a little more than 1 mg. (Muench. Med. Woch. No. 7—1915).

Fistula in ano should always arouse suspicion of active tuberculosis.

Nose of every pulmonary case should be thoroughly examined and all obstructions to breathing removed.

Every case of tuberculosis has a curable stage. Do not let it get beyond this. It requires early diagnosis.

DR. RODMAN AND "THE COLLEGE."

Why Dr. Rodman should have dragged into his presidential address some laudatory remarks about the American College of Surgeons is a mystery, but it is none the less a fact that has excited a good deal of adverse comment. It does not matter what the college is or what it stands for or what it has done or what it is going to do or what it thinks it is going to do; it has nothing to do with the American Medical Association in any way whatsoever. This college of surgeons is a purely voluntary, proprietary organization of men who brought themselves together for stated purposes; they may or they may not attain those purposes; but that too has nothing to do with the case. It seems clearly out of place to announce an intention of discussing the work of the American Medical Association and then proceed to talk about an organization which has nothing to do with the Association. And the criticism of this proceeding was not confined to outsiders; not a few members of the college itself were very free in their words of adverse comment.—*California State Journal of Medicine*.

TWENTY-THIRD ANNUAL MEETING OF THE TRI-STATE MEDICAL SOCIETY OF IOWA, ILLINOIS AND MISSOURI, CHICAGO, ILLINOIS.

Wednesday, Thursday and Friday, October 6, 7, and 8, 1915.

MEETING PLACE AND HEADQUARTERS:

HOTEL LA SALLE,

Madison and La Salle Streets.

OFFICERS

Dr. Lewis Schooler, President.....Des Moines, Iowa
Dr. Frank A. Will, Vice-President for Iowa....
.....Des Moines, Iowa
Dr. Clarence L. Wheaton, Vice-President for IllinoisChicago, Ill.
Dr. F. M. Roberts, Vice-President for Missouri..
.....Hunnewell, Missouri
Dr. Emory Lamphear, Treasurer.....
.....3447 Pine St., St. Louis, Mo.
Dr. Charles H. Parkes, Secretary.....
....Suite 1725, 25 E. Washington St., Chicago, Ill.

The 1915 meeting includes two days for scientific papers with discussions, and one day devoted exclusively to clinics.

Business meeting, October 6, at 12 M.

PROGRAM

October 6—Morning Session, 9 a. m. to 12 m.

A Case of Acute Uremia, with Complications. H. H. Fletcher, M. D., Winchester, Ill.

Appendicitis Not Conquered. A. H. Kenniebrew, M. D., Jacksonville, Ill.

Appendicitis Outside the Hospital. W. H. Smith, M. D., Kansas City, Kansas.

The Rapid Treatment of Epithelioma and Lupus. C. S. Nieswanger, M. D., Chicago.

Hodgkins' Disease, with Special Reference to Causation and Treatment. D. C. Brockman, M. D., Ottumwa, Iowa.

Habits and Drug Addictions. Wm. K. McLaughlin, M. D., Chicago.

Successful Skin Grafting. J. F. Clark, M. D., St. Louis, Mo.

The Surgery of the Aged. Walter U. Kennedy, M. D., St. Louis, Mo.

Afternoon Session—2 p. m.

Demonstration of the Muscular Actions of the Eyeball. A. C. Ragsdale, M. D., St. Louis, Mo.

Obscure Diagnoses. George S. Edmonson, M. D., Clinton, Ill.

Ectopic Pregnancy. Carl W. Wahrer, M. D., Fort Madison, Iowa.

Pituitrin in Surgery: Report on a Series of Cases, and also Experiments on Dogs. E. H. M. Griffiths, M. D., Chicago.

Fixed Dosage in Scopolamin-Morphin Anesthesia. Bertha Van Hoosen, M. D., Chicago.

Chorea Versus So-Called Healthy Tonsils. A. B. Middleton, M. D., Pontiac, Ill.

Preventive Treatment of Rectal Fistulae. J. Rawson Pennington, M.D., Chicago.

Treatment of Genito-Urinary and Rectal Fistulae. Emil G. Beck, M. D., Chicago.

(a) The Use of Phylacogens in the Treatment of Chronic Suppurative Catarrh of the Middle Ear.

(b) Subconjunctival Injection of Cyanide of Mercury in Certain Diseases of the Eye. Flavell B. Tiffany, M. D., Kansas City, Mo.

Subject to be announced later. Robert H. Babcock, M. D., Chicago.

Roentgen Diagnosis of Diseases of the Alimentary Tract. M. J. Hubeny, M. D., Chicago.

Measles. Jennie W. Parks, M. D., Cuba, Ill.

Case Report. Clara L. K. Cronk, M. D., Bloomfield, Iowa.

Evening Session—8:30 p. m.

Address. A. A. O'Neill, M. D., President-Elect, Chicago Medical Society.

Address. Lewis Schooler, M. D., President, Tri-State Medical Society.

Lantern Slide Lecture on His Work in Sex Gland Implantation. G. Frank Lydston, M. D., Chicago (by invitation).

October 7—Morning Session—9 a. m.

(Intermission will be from 12:30 to 2 p. m.)

Symposium on Tuberculosis:

Glandular Tuberculosis. Frederick Tice, M. D., Chicago.

Pulmonary Tuberculosis. Edwin B. Tuteur, M. D., Chicago.

Joint and Bone Tuberculosis. C. E. Ruth, M. D., Des Moines, Iowa.

Genito-Urinary Tuberculosis. Robert H. Herbst, M. D., Chicago.

Institutional Care. George T. Palmer, M. D., Springfield, Ill.

Climatic Treatment: Lantern Slides of the Southwest. W. T. Brown, M. D., Watrous, New Mexico.

Treatment by Spengler's Immune Koerper, Case Report. Granville Ryan, Des Moines, Ia.

Law That the Doctor Ought to Know. T. C. Buckston, M. D., Decatur, Ill.

Malignant Tumors of the Appendix. Charles B. Burke, M. D., Atlantic, Iowa.

New Methods of Pyloroplasty for Congenital Stenosis (lantern slides). Alfred A. Strauss, M. D., Chicago.

The Clinical Importance of Peptic Digestion and Gastric Motility. Walter W. Hamburger, M. D., Chicago.

Goiter. Edwin B. Sloan, M. D., Bloomington, Ill.

Static Foot Trouble (lantern slides). E. P. Cooley, M. D., St. Louis, Mo.

Minor Surgical Gynecology (lantern slides). C. E. Ruth, M. D., Des Moines, Iowa.

Evening Session—8:30 p. m.

Medical Reserve Corps of the United States Army. Major James M. Phalen, U. S. Army (by invitation).

October 8, 1915.

CLINICS

Time and place for holding the clinics, if not included in this schedule, will be furnished during the meeting, by bulletin.

Rush Medical College, Wood and Harrison Sts. Surgery. Arthur Dean Bevan, M. D.

2 to 4 p. m.:

Inspection of Department of Health of Chicago, including the laboratories, with demonstrations of diagnostic methods free to the poor: Widal, Wassermann, Typhoid Immunization, Pasteur Treatment, Tuberculosis Tests, and so forth. John Dill Robertson, M. D., Commissioner of Health of the City of Chicago.

Michael Reese Hospital, 29th and Groveland Ave. 9 to 12. Surgery—Diagnostic and operative, with special attention to kidney work. Daniel N. Eisen-drath, M. D.

Cook County Hospital, Wood and Harrison Sts. 2 to 4. Orthopedic. Charles M. Jacobs, M. D.

German Hospital, Larrabee and Grant Place. Surgery. Jacob Frank, M. D.

Frances Willard Hospital, 710 S. Lincoln St. 10 to 12. Surgery—Diagnostic. Fred C. Zapffe, M. D.

North Chicago Hospital, No. Clark and Wrightwood Ave. 9 to 12. Surgery—The treatment of fistulae and abscesses by means of bismuth paste. Emil G. Beck, M. D.

Post-Graduate Hospital, 24th and Dearborn Sts. Surgery. Emil Ries, M. D.

Post-Graduate Hospital, 24th and Dearborn Sts. General Clinics—Through the courtesy of Dr. Ries, all of the clinics at the Post-Graduate Medical School are thrown open to the members of the Tri-State Medical Society on this date.

Cook County Hospital, Wood and Harrison Sts. Skin. F. E. Simpson, M. D.

Chicago Polyclinic, Chicago Ave. and Wells St. 9 a. m. Genito-Urinary. Robert H. Herbst.

Cook County Hospital, Wood and Harrison Sts. 9 to 12. Gynecological Clinic. Bertha Van Hoosen, M. D.

Columbia Hospital, 46th and Champlain Ave. Surgery. A. Augustus O'Neill, M. D.

Frances Willard Hospital, Lincoln St., between Harrison and Polk Sts. Harelip and Cleft Palate. Truman W. Brophy, M. D., D. D. S.

West Side Hospital, Lincoln and Wood Sts. Goiter—Five cases. Edwin P. Sloan, M. D., Bloomington, Ill.

West Side Hospital, Lincoln and Wood Sts. 8 a. m. Tonsils and adenoids. Arthur M. Corwin, M. D.

West Side Hospital, Lincoln and Wood Sts. 10 to 12. Surgery. Paul Gronnerud, M. D.

Special demonstrations in operative surgery on the cadaver every evening at the Illinois Post-Graduate School. Paul Gronnerud, M. D.

Cook County Hospital, Wood and Harrison Sts. 2 p. m. Nose, throat and ear. Robert Sonnenschein, M. D.

West Side Hospital, Lincoln and Wood Sts. 9 a. m. Hemorrhoids and rectal fistulae. J. Rawson Pennington, M. D.

AMERICAN ASSOCIATION FOR STUDY AND PREVENTION OF INFANT MORTALITY.

The sixth annual meeting of the American Association for Study and Prevention of Infant Mortality will be held in Philadelphia, November 10-12, 1915.

The subjects to be discussed include:

Eugenics.

Effect of the economic standing of the family on infant mortality.

Infant welfare nursing in small cities, towns and rural districts.

Institutional mortality.

Midwifery conditions.

Treatment and prevention of respiratory diseases.

Mr. Homer Folks of New York is president of the association, and Dr. S. McC. Hamill of Philadelphia, president-elect for 1916. Dr. Joseph S. Neff, 801 Weightman Building, Philadelphia, is chairman of the committee on local arrangements.

The sessions will be under the chairmanship of the following:

Eugenics—Dr. Wm. F. Snow, New York City.

Pediatrics—Dr. Charles A. Fife, Philadelphia.

Obstetrics—Dr. Mary Sherwood, Baltimore, Md.

Economic Aspects of Infant Welfare—Mr. Sherman Kingsley, Chicago.

Nursing and Social Work—Miss Ella Phillips Crandall, New York City.

Public Health

PUBLIC HEALTH EXHIBIT TO BE BIG FEATURE AT STATE FAIR

MOST UNIQUE AND IMPRESSIVE HEALTH EXHIBIT YET DEVELOPED WILL BE SHOWN

PLACES ILLINOIS IN LEAD IN HEALTH EDUCATIONAL WORK OF THIS KIND

The State Board of Health is preparing another elaborate and unique public health exhibit for the State Fair which will be held at Springfield, Ill., September 17-26.

Last year the Board had an exhibit in the educational section which was very generally commented upon in the public press as one of the most distinctive features of the new attractions at the State Fair. It was thronged with visitors

from the opening to the closing hours and doubtless was the means of accomplishing much good in behalf of sanitation and public health.

For this year's show Doctor Drake, secretary of the state Board of Health, has developed a number of new features among which are mechanical and still models portraying simple health truths in a most impressive way, a new series of health cartoons and posters, new demonstrations with short crispy talks by health experts, and, what probably will prove a very popular attraction, Shifting Pictures, an adaption of the new moving picture idea. Two new booths will be devoted to the "Shifties."

The Illinois public health exhibit in its entirety is the original production of the present secretary of the Board, and public health men who have seen it pronounce it the most unique, impressive and instructive health exhibit yet developed in this country. The general comment is that it places Illinois in the lead in public health educational endeavor and reflects great credit upon the administration under whose authority and direction it has been developed.

On conclusion of the State Fair, this exhibit will be shown in all parts of the State, in many instances under the auspices of County Medical Societies.

TUBERCULOSIS CONFERENCE.

At the request of the Governor of Indiana, Governor Dunne has appointed twenty-five delegates to represent Illinois at the Mississippi Valley Tuberculosis Conference which will be held at Indianapolis from September 29 to October 1. This conference, made up of officially appointed delegates from the entire central section of the United States, devotes itself to the discussion of the practical problems of the warfare against tuberculosis and has much to do with outlining the methods to be employed in the various states.

The delegates appointed by Governor Dunne are: Dr. George T. Palmer, Springfield, president of the Illinois State Association for the Prevention of Tuberculosis; Dr. Theodore B. Sachs, Chicago, president of the Chicago Tuberculosis Institute; Dr. Charles W. Lillie, East St. Louis, president of the Illinois State Medical Society; Dr. Charles J. Whalen, Chicago, president of the Chicago Medical Society; Dr. O. W. McMichael, Chicago, director of Chicago open

air schools; Dr. E. A. Gray, Chicago, director of the Chicago Fresh Air Hospital; Dr. John Ritter, director Rush Tuberculosis Dispensary; George W. Perkins, Chicago, director of the Chicago Tuberculosis Institute; Dr. T. B. Knox, Quincy, president of the Adams County Tuberculosis League; Dr. Jeanette Wallace, Peoria, secretary of the Peoria Tuberculosis Association; Dr. Josephine Milligan, Jacksonville, director Morgan County Tuberculosis League; Dr. F. D. Rich, Joliet, president of the Joliet Anti-Tuberculosis Society; Dr. E. M. Sala, Rock Island, president of the Rock Island Tuberculosis Association; Dr. C. B. Johnson, Champaign, president of the Champaign County Tuberculosis Health League; Dr. A. L. Mann, Elgin, vice-president of the Kane County Tuberculosis League; Jesse Lowe, Beardstown, president of the Beardstown Tuberculosis League; Mrs. Edgar Foster, Mt. Carmel, president of the Mount Carmel Woman's Club; Dr. Samuel Dodds, Cairo, vice-president of the State Association for the Prevention of Tuberculosis; Dr. P. A. Pyper, Pontiac, president of the Livingston County Tuberculosis Society; Mrs. E. R. Curry, Mt. Sterling, chairman of the Department of Public Health, State Federation of Women's Clubs; Dr. H. A. Pattison, Rockford, president of the Winnebago County Tuberculosis Association; Herbert S. Matthews, Pekin, president of the Pekin Union Department of Tuberculosis; Dr. E. W. Fiegenbaum, Edwardsville, secretary of the Madison County Tuberculosis Association; Mrs. A. L. Adams, Jacksonville, director of the Morgan County Tuberculosis League and James Minniek, Chicago, superintendent of the Chicago Tuberculosis Institute.

EPIDEMIOLOGIST WANTED FOR ILLINOIS HEALTH SERVICE

SELECTION TO BE MADE BY CIVIL SERVICE TEST
IN OCTOBER

OPEN TO ALL MEDICAL MEN

The Illinois State Civil Service Commission announces an examination for the position of epidemiologist in the service of the State Board of Health to be held October 2, 1915.

This is one of the important new offices created by act of the last General Assembly and is the first of a number of positions requiring technical knowledge of a high order which are to be filled through competitive test. Other new positions for which examinations will be held in the near future are Chief Sanitary Engineer, Assistant Sanitary Engineer and District Health Officer. Three engineering and three health officer positions are to be filled.

Incidentally, this is the initial step towards the reorganization and up-building of the public health service of the state, one of the most important moves made in health administration circles in Illinois in twenty years.

The Civil Service Commission's announcement of the examination reads as follows:

EPIDEMIOLOGIST.

Salary \$200 to \$400 a month. Open to men over 25. Open to non-residents of Illinois. (One place to be filled in Board of Health) Scope and weight: Training, experience and qualifications for the position, 10. The preliminary portion of the examination will be unasssembled, questions on education and experience being mailed to applicants. Those who qualify will be interviewed orally at a later date. Duties include investigation of diseases of man with regard to their control and the organization of health service in communities. Must be qualified to make clinical diagnosis in communicable diseases.

STATE BOARD OF HEALTH EXAMINATION FOR MEDICAL GRADUATES.

The next examination for physicians desiring to engage in the practice of medicine in Illinois will be held at the Coliseum Annex, Chicago, October 13, 14, 15.

Application for admission to the examination must be on file in the office of the State Board of Health in Springfield by September 30.

STATE BOARD OF HEALTH WILL HAVE BRANCH OFFICE AT STATE FAIR * GROUNDS.

VISITING PHYSICIANS AND HEALTH OFFICERS INVITED
TO MAKE THIS THEIR HEADQUARTERS.

Pursuing the policy of keeping in close touch with the medical profession and public health authorities of Illinois' communities, the State Board of Health will open and maintain offices at the state fair grounds during the entire period of this year's exposition, and, through the medium of the ILLINOIS MEDICAL JOURNAL, the Board extends to all visiting physicians and health officers a cordial invitation to make these offices their headquarters while at the fair.

The offices will be located in the south balcony rooms of the Exposition Building, immediately ad-

joining the public health exhibit and will be open from 9 a. m. to 5 p. m. each day of the fair.

Special appointments for consultation with the experts of the Board can be arranged in advance, or upon calling the main offices in the Capitol Building upon arrival in Springfield.

BETTER BABIES' CONTEST TO BE HELD AT STATE FAIR.

NOT A "BABY SHOW," BUT A SCIENTIFIC TEST.

A "Better Babies' Contest," a popular, yet scientific, movement to improve the race by holding up certain physical and mental standards of perfection to which every mother should aim to bring her baby, will be conducted under the auspices of the educational department of the Illinois State Fair at Springfield, September 21-23.

The contest will be open to children between the ages of one and four years who are bonafide residents of Illinois. The five tests to which the children are to be subjected will be wholly within the hands of medical experts, assisted by a large corps of trained nurses. Good looks and fine raiment will carry no weight, the only consideration being physical and mental development.

The tests will be conducted in a large room especially constructed for the purpose in the Womans' Building on the fair grounds. Particular attention has been given to sanitary and hygienic arrangements and at no time will the children come in direct contact with the visiting public, although the public may view the larger part of the proceedings through glass windows which have been inserted on two sides of the room.

Baby welfare exhibits, demonstrations of proper feeding, dressing, bathing, sleeping, etc., as well as daily popular illustrated lectures for mothers, will be held in connection with this contest.

The following women have been appointed a committee on arrangements: Mrs. Edward F. Dunne, Mrs. Frank S. Dickson, Mrs. John Dill Robertson, Mrs. Medill McCormick, and Mrs. C. St. Clair Drake, chairman.

The number of applications entered by mothers up to August 26 indicate that there will be some three hundred contestants.

The awards will consist of gold and bronze medals, and solid silver loving cups.

STATE BOARD OF HEALTH NOTES.

With a view to raising the standard for the practice of midwifery in Illinois, the Committee on Midwifery of the Illinois State Board of Health is considering the rearrangement of the examination schedule for midwives, and the inclusion of grading of candidates on education and training; also on habits of personal cleanliness. Rules governing obstetrical practice by midwives have been formulated and will be presented at the next meeting of the Board in September for consideration and adoption.

* * *

The Board desires to again call the attention of health officers and physicians to improved laboratory

facilities for the bacteriologic diagnosis of diphtheria. By reason of the establishment of branch laboratories in Chicago and Mt. Vernon, much earlier reports upon laboratory findings will be possible. Examinations of terminal cultures also will be made at the branch laboratories.

All state antitoxin agencies, or free distributing stations as they are now known, have been equipped with culture outfits and addressed shipping packages which can be secured by physicians for the asking. This service is free.

* * *

Arrangements for enforcement of the new birth and death registration law, enacted by the last General Assembly, are rapidly nearing completion. Blank forms of birth and death reports, burial permits and pamphlets of instructions are now being printed. Under the new law there will be about 3,000 registrars in Illinois whose duty it will be to rigidly enforce the law. After the new blanks are distributed it will be required of undertakers and embalmers to fill out all the personal and statistical particulars required for death certificates and to take these to the attending physician for certification as to cause of death. Burial permits will be required before a body can be legally disposed of. The undertaker must secure these permits and must present them to the sexton at the cemetery before body can be buried therein. Special provisions are made for cemeteries having no person in charge. Penalties are provided for violation of provisions of the law.

The new law, a most urgently needed regulatory measure, will work no hardships on anyone and when in full force and effect will not only be of far reaching benefit to the people of the state but will remove from the fair name of Illinois the stigma of "non-registration state," a characterization which we too long have had to bear with discredit to ourselves.

Every good citizen of Illinois will assist in enforcing the law. It is for the good of the people—nothing more.

* * *

Medical colleges contributing any considerable number of students to the Illinois State Board examinations have again been notified that the pre-medical education credentials upon which candidates seek matriculation to these colleges, must be submitted to the Board at Springfield for examination and approval within fourteen days after opening of the session to which admission is sought.

The plan of examining these credentials at time of matriculation instead of at time of application to the Board for admission to examination for state license, as heretofore, not only works to the advantage of the college and oftentimes saves the unqualified student a waste of five years in medical study and much money in wasted tuition fees, but it also is a most important factor in raising the standard of medicine in this state.

Auto Sparks and Kicks

HOW TO KEEP HANDS CLEAN.

I have always been interested in the auto hints published in the JOURNAL from time to time. By taking care of my own cars, I know I have prolonged the lives of them. This, of course, necessitates soiling one's clothes and hands. Soiling your clothes may not directly interfere with your practice, while it is very important to keep your hands in good condition. The reason is obvious. I have tried all sorts of methods, both in trying to keep my hands from being soiled and also in cleansing them after being soiled. I have worn leather gloves inside of cotton gloves, rubber gloves inside of canvas gloves and various other combinations. Some things about a car are impossible to do with gloves on. After failing to keep my hands clean I have tried to cleanse them with various kinds of soaps, followed by gasoline, benzine, ether, chloroform, etc. The soap, of course, is the least injurious and gives the poorest results. The chemicals harden and dry the hands.

The simplest and most efficient method I have found is to take about a tablespoonful of ordinary automobile green soap and, without water rub it into the hands thoroughly. Place some in the palms of the hands and scratch the palm with the opposite hand in order to get the soap under the nails, then flex and extend the fingers while rubbing the soap on. In short fill all the cracks, creases and crevices with the soap and then let it dry before starting to work. By using gloves in addition to this, of course, insures greater cleanliness, yet I have used this method without gloves and have kept my hands in good condition.

Finally when you wash your hands the soap comes off last. You will find when you go to the hospital to remove that appendix your hands will be clean and soft and just as aseptic as before.

EVERETT B. WILLIAMS, M. D.

Chicago, Ill.

HE GOT IT.

In honor of a visit paid to his plant by the governor of the state, an automobile manufacturer once had a complete car assembled in something like seven minutes.

Some weeks after the feat was heralded in the daily papers the telephone at the factory rang vigorously.

"Is it true that you assembled a car in seven minutes at your factory?" the voice asked.

"Yes," came the reply. "Why?"

"Oh, nothing," said the calm inquirer, "only I've got the car!"—*Everybody's*.

AN AIR LEAK.

Sometimes the small rubber cushion inside the valve cap of the tire gets turned in such a way that when the cap is screwed down the rubber presses down on the valve core and a slow leak will result. It is well to look at the cap before putting it on.

RUNS ON PATENT MEDICINE.

A. A. Wheeler of Mitchell, S. D., found himself six miles from home with an empty gasoline tank. He ran to the next house on gas from his motor primer, and got a bottle of patent medicine which carried him two miles to a supply of kerosene on which he completed the trip into town, he declares.—*Motor Age*.

TO PREVENT SLIPPING.

On metal-to-metal clutches flake graphite is used to prevent slipping. It is often advisable to mix flake graphite with a little oil to form a thick paste. This type clutch should be treated frequently in order to prevent the metal surfaces from wearing away. If the slipping is not stopped the drum and band wear to such an extent that adjustment becomes impossible.—*Chicago Daily News*.

FOOL PROOF SPARK PLUG.

This is made by the Fulton Company, 726 National avenue, Milwaukee, Wis. Among its many advantages is the oil drip feature. The electrodes on "EKLIPS" plugs are so constructed that no oil can accumulate in the sparking gap between the points. They are "kicked up" so that the oil runs from the sparking gap to the lowest part of the electrodes, thus leaving the actual firing surface entirely clear. The illustrations show the plug compared with the general run of spark plugs on the market.

Illinois State Medical Society

EYE, EAR, NOSE AND THROAT SECTION AT SPRINGFIELD, MAY 17, 18, 19, 1915.

The Chairman: The first paper on the program, this morning, is "Trephining Versus Iridectomy in Glaucoma," by Dr. Harry Woodruff of Joliet.

Dr. Woodruff: *Mr. Chairman, Gentlemen:* I notice a number of the audience who are not interested in eye work particularly, and the audience so far is rather small. In the language of the Scripture, I will "Beseech you to hear me patiently."

(Paper read)

The Chairman: I would like to invite Dr. Arnold Knapp, our guest, to take part in the discussion of this paper and also any other papers that he wishes. I will ask him to open the discussion on this paper of Dr. Woodruff.

Dr. Knapp: *Mr. Chairman, Gentlemen:* I am entirely in accord with Dr. Woodruff's conclusions, and I think everybody must reach that conclusion, if he has followed the trephining operation with any degree of care. I would like to ask him a question. If I understood him rightly, he said that trephining was not indicated in the glaucoma, which follows cataract operations in which the lesions is probably the result of an adhesion of the capsule or disease of the iris. This is a condition which has interested me always and I have found it an extremely difficult one to meet by any method of operation.

As for the trephining operation itself, I think the pendulum of enthusiasm is bound to swing back and I don't think anything will bring any operation into quicker disrepute than the wholesale way in which it was applied to practically every case, and I think, to a great extent, Dr. Elliot's teachings have been responsible for that. It seems to me that we are perfectly justified in realizing that trephining should not be done in certain cases and under certain conditions, and the one that has particularly impressed itself upon my mind is that a trephining should not be done if there are any inflammatory symptoms. It has struck me that these eyes that were subjected to the trephining operation remained red; that there was a great deal of iritis always developed and that the condition was, I think, often made very much worse, although the tension was hoped to be reduced.

I think that one can say that the treatment of glaucoma can briefly be expressed as follows. In the acute attacks, there is absolutely no reason why the old iridectomy should not be the proper operation, that is, of course, if it is properly performed. If you have a case in which you can assume that no organic adhesions has occurred, I think the iridectomy will give you excellent results. In fact, I can limit the trephining operation to the cases in which you have advanced congestion in the eye and in which you can take it for granted that an organic adhesion has taken place; in which your iris is degenerated; in which your optic nerve is deep cut and your field contracted. In these cases, I think the trephining operation is the

safe method of operating and I think the dangers which we have found, for instance, a too extensive cystoid scar, at least in many cases, were due to the fact that I used too large a trephine. I used to use a two millimeter trephine and I get along now with either one and a half or one. In using the smaller sized trephine, I think the results have been more satisfactory.

I am very much obliged to be able to say a few words on this very important subject and I want again to congratulate Dr. Woodruff on his excellent paper.

The Chairman: I will ask Dr. Wood to discuss the paper of Dr. Woodruff also.

Dr. Casey Wood: *Mr. Chairman, Gentlemen:* The question of Dr. Woodruff's paper is the consideration of the pathological conditions that go under the name of glaucoma. I have read many papers and I have heard many definitions on the subject, with the assumption that glaucoma is a pathological entity, definitely described by that one word, "Glaucoma." Of course, we all know that it presents many aspects and the consideration of the particular form of relief for this disease seems to be entirely a failure unless the writer tells us very definitely what kind of glaucoma he is talking about. I think we cannot improve upon the good old clinical division of glaucoma into, perhaps, three parts. The first is that form of glaucoma in which there is an excessive amount of secretion, or it may be excretion, from the eye; secondly, that in which the exit of this excretion from the eye is pathologically interfered with, and the third is that in which we may have both an excessive amount of secretion and an interference with the excretion.

Now, last year, at the congress at Oxford, practically the same comparison of iridectomy with the LaGrange operation, the Home operation and the Elliot operation was made by a couple of men who had large opportunities for doing operations for glaucoma, and there, much to the surprise of these men themselves, as shown in the report, they found that iridectomy would hold its own as against these other operations in the forms of glaucoma there met with. Iridectomy was done in the chronic simple forms and in most of the secondary forms of glaucoma and it was found that quite unexpectedly to themselves, iridectomy is not an operation to be superseded by trephining or the newer operations.

I think that the question of iridectomy, as against any of these others, should be considered from the standpoint of the possibility of draining through the iris tissue itself. An iridectomy leaves the tissues of the iris open to observation. The cut edges of the iris do not heal. We do not have a covering over, as we usually have in most of these cases, of anything approaching connective scar tissue. The consequence is that the iris remains open. If the particular iris is in that condition so that observation is possible, and if the observation is sufficient to relieve the glaucoma, all well and good. If it does not, then we have a failure of that operation of iridectomy.

The father of the gentleman who has just spoken to us, as I remember, insisted that some of the most brilliant results by iridectomy were to be had in the secondary glaucoma, following cataract extraction, especially in the discussion of that question of cataract with or without iridectomy, and he always added that too much was said about the seriousness of the secondary glaucoma in cataract where iridectomy was done, because all one needed to do is to do that iridectomy and that the results were very good. I think that is borne out by the experience of most operators.

I am very glad that Dr. Woodruff brought this matter up because I perceive, as I think all of us do, that trephining would eventually occupy the position which it deserves, and that it is not applicable in all cases of glaucoma and that it is not necessary in all cases of glaucoma and that iridectomy is an easier, safer and better operation than any of these forms of sclerectomy.

The Chairman: The paper is open for general discussion.

Dr. Harry S. Gradle: A year ago, at a special meeting, I voiced the opinion that the trephining operation, as proposed by Col. Elliot, was rather to be considered as an operation of last resort, rather than the operation that we shall turn our attention to in operative cases of glaucoma. Since then, I have had the satisfaction of having this statement confirmed by several men in literature and in private discussion. Dr. Parker of Detroit, last year at the Academy meeting, in Boston, made the same statement. In the last number of the *Clinical Journal*, Oxenfeldt, basing his statement on his rather large experience, claimed that trephining was an operation of the last resort; that after other things had been attempted and had proved unsuccessful, that then and only then are we justified in exposing our patients to the continued danger of infection that follows the trephining operation. It seems to me that we should attempt the trephining operation in the acute and the chronic forms of inflammatory glaucoma only as a final resort, when one or more iridectomies have been unsuccessful, and the idea of using the trephining operation as a proper operation in inflammatory glaucoma, should be entirely dismissed. In the forms of glaucoma simplex, however, the immediate results of trephining have proven satisfactory. Personally, in the simplex forms of glaucoma, I am in favor of iridectomy. Only in case this type of operation proves unsuccessful, and the idea of using the trephining operation as a proper operation in inflammatory glaucoma, should be entirely dismissed. In the forms of glaucoma simplex, however, the immediate results of trephining have proven satisfactory. Personally, in the simplex forms of glaucoma, I am in favor of iridectomy. Only in case this type of operation proves unsuccessful are we then justified in resorting to the trephining or one of the operations that causes an extra-ocular drainage. I believe, although Elliot criticizes this, that the trephining operation will fall in the same class as Holt, with some forms of the

LaGrange and the various other operations that may take extra-ocular drainage. These operations are more or less dangerous and constitute a permanent menace to your patients and should be employed as operations of last resort alone.

The Chairman: I will ask Dr. Woodruff to close.

Dr. Woodruff: Just a word, in answer to Dr. Knapp's question about the method in dealing with a glaucoma secondary to cataract. The idea sought to convey was if there was any visible explanation to the rise in tension, to, if possible, relieve that condition and, of course, one of those conditions is an involvement of the iris in the corneal wound. So that, if it is a possible thing to release or relieve those prolapsus—for instance, the iris is prolapsed into the wound; the pupil is thrown forward. Of course, it is not possible, if the case has remained in that condition any length of time to release the iris in the wound, but it is possible to cut another portion of the iris out and I have done that on both sides. Of course, it makes an exceedingly broad corneal wound, but I have succeeded in relieving tension by such proceedings.

Dr. Wood has spoken about glaucoma, or rather a condition of tension not being a pathological entity, he said, which, of course, is true, but the idea of all these operations is to relieve tension and while we do hear and perhaps recognize a condition of glaucoma in which we do not find tension, that is, we find all the other symptoms but the tension, and there, of course, we do not advise any operation; but we know that the symptoms of disease and the condition which produces blindness is that condition of tension, so we must do something to relieve that. I will not take up the question of method at all, but I agree with Dr. Fisher that a method which cuts to the root of the iris is the way in which an iridectomy should be performed.

The Chairman: The next paper on the program will be that of Dr. Freer: "Opening of the Frontal Sinus, with Demonstrations on the Cadaver."

Dr. Otto T. Freer, Chicago: (Abstract:) The enlargement through the nose of the ostium or outlet of the frontal sinus, long generally regarded as prohibitively difficult, has been developed by the undiscouraged efforts of Ingals, Halle, Vacher, Mosher and lately of P. Watson Williams and Herbert Tilley of London, into a still intricate but nevertheless practicable method of operation. Dr. Freer, by original research, has tried to still further improve the operation, studying the anatomical route from the sinus interior downward into the nose as well as from below up, as has so far been mainly done.

In looking into a frontal sinus opened above the brow, the small normal opening or ostium, of about the diameter of a straw, is seen at the bottom of the sinus in about the center of the funnel-shaped sinus floor. This floor in front of the ostium is firm and hard, being formed here by the internal nasal crest of the frontal bone. Posteriorly and toward the orbit from the ostium, however, the frontal sinus floor is created by the walls of anterior ethmoidal

cells, these cells extending backward underneath the orbital plate of the frontal bone, which not only roofs the orbit but, extending inwardly beyond it, also forms the cranial covering of the anterior ethmoidal cells. The removal of these ethmoidal cells from under the orbital plate, by curetting with Dr. Freer's specially devised frontal sinus curettes from the interior of the sinus downward into the nasal cavity, opens the frontal sinus so widely into the nose in most cases, that almost always the cutting away forward of the internal nasal crest with a burr driven by a dental engine, may be dispensed with, the broad opening made by destruction of the ethmoidal cells being sufficient.

In most cases Dr. Freer's method of operating is begun by removal of the anterior half of the middle turbinate with the Freer ethmoid, thin-bladed, hand-pushed chisel and the Grünwald punch. In some cases, where the middle turbinate flanges out widely from the outer nasal wall, it may be left intact. The removal of the anterior half of the middle turbinate uncovers to view the uncinate process and the infundibulum, of which it forms the anterior boundary. An attempt is then made to pass the probe into the frontal sinus. If it will enter, the probe is left in place as a guide through the ethmoid cells to the sinus. Whether the probe will pass or not, the next step is the clearing away with the ring curette of the ethmoid cells from the bulla ethmoidalis forward to the ascending process of the superior maxillary bone and then up to and, if possible, through the frontal sinus floor. The knife-edged ring curette used is first made to enter the bulla ethmoidalis and from this starting point it cuts away the ethmoidal cells forward until it is arrested by the hard, strong ascending process. This forward direction is a much safer one than cutting backward from an infundibular cell after the manner of Mosher and the bulla, being the lowest and most constant of the ethmoid cells, is the easiest one of all to find. If the covering of the uncinate process is swollen, it is sometimes necessary to shave it off, in order to fully expose the bulla. As the next step, one of Freer's frontal sinus curettes is passed up into the sinus in the manner of a probe, the clearing away of the anterior ethmoid cells usually making this easy. If the sinus floor be unusually hard, it may be necessary to begin with the smallest of these curettes, called the probe curette. The edge of the curette is directed backward and will sweep away the remains of ethmoid cell walls from underneath the orbital plate roof of the ethmoid cells, thus bringing the posterior wall of the frontal sinus and the orbital plate into a single, sweeping curve. The direction followed by the Freer curettes is safe as they cut out from the sinus downward into the nasal cavity. Working from the nose up into the sinus, as is usually done, endangers the cranial and orbital walls of the sinus.

The curette, in either cutting upward into or downward out from the sinus into the nasal cavity, must not be turned inward toward the intersinus septum, as this might possibly perforate the wall of

the olfactory fossa lodging the olfactory bulb, this fossa being floored by the cribriform plate of the ethmoid bone. Such a perforation would expose the dura or pierce it, and might lead to meningitis.

The preliminary removal of the anterior ethmoid cells in the second stage of the operation involves some danger of perforating the orbit, if the curette be directed strongly outward instead of forward and upward. The curette must not leave the space constituting the surgical approach to the sinus, this space being bounded inwardly by the turbinal plate of the ethmoid bone and outwardly by its lamina papyracea. The curette's proper direction may be kept by observing a tracing of the frontal sinus above the patient's brow, the tracing being made from the x-ray plate, which is an essential preliminary to the operation.

While in most cases the artificial opening made from the nose into the sinus will stay open, especially where the ethmoid cells removed are large, if the opening has to be made through small cells with strong walls or following a preceding removal of the cells with succeeding thickening and eburnation of the bone, granulations, terminating in adhesions, may close up the surgically enlarged outlet of the sinus. To prevent this the gold drainage tube of Ingals may be used. Dr. Freer is working at the construction of a rubber drain which will be self-retaining and which will be easier to introduce and replace than the Ingals tube.

The complete text of Dr. Freer's article on the intranasal opening of the frontal sinus will appear in the Transactions of the American Laryngological Association and later in the *Laryngoscope*. The article is fully illustrated.

DISCUSSION.

Dr. Woodruff: Mr. Chairman, I would like to ask Dr. Freer if he can tell us more about those two cases of blindness following operation on the frontal sinus, one of which was caused by intra-orbital hemorrhage? Was the blindness permanent or transient?

Dr. Freer: I know of these cases merely from the statements of the operators to me. The blindness was permanent, both in the orbital abscess and in the hemorrhage case. I know also of a third instance, where instant and permanent blindness followed the simple washing out of the maxillary antrum through the natural opening by means of an antrum tube. It is probable that the tube entered the orbit through the thin roof of the antrum, for immediate protrusion of the eyeball occurred, due, of course, to the fluid forced into the orbit.

Dr. Beck: To me, this paper was extremely interesting and important, because I have been working on this line, following Mosher's suggestion, since he showed me his operation before he presented it before the American Medical Association, several years ago. He took us down in the basement in the hotel and showed us what he had. I have been doing this operation, as suggested by Dr. Mosher, up to the

present date; that is, up to this time, as an operation of choice in all sinus work.

The first suggestion that Dr. Freer makes, in regard to Mosher's operation, refers to Mosher's mode of entrance into the ethmoid cells. Mosher himself insisted that you must break in in the region of the agger nasi, into a cell he calls the agger cell. If it is there, you will enter into it with the curette. So that is not an insistent point with me at least. If I can't get into the agger cell I have a much more proper method of entering the frontal sinus than as stated by the gentlemen who have defended it.

As to Dr. Freer's statement in regard to the perforation of the orbit, I have not satisfied myself, but I am confident that in no less than twenty-five non-suppurative cases I have entered through the bone, externally to the periosteum, and in no instance have I seen anything more than a slight edema of the lid, and a little discoloration. Therefore, if those cases have occurred, and I haven't any doubt that they did, wouldn't it be the duty of every man who has such a thing as that, to report it in detail, because that is what we are after; to see whether such cases do occur. I don't want to belittle this danger. I just want to give my experience and my work.

I want to say that the instruments that the doctor presented are certainly excellent, and I know they will help me in this operation. I have not seen them before, but I know that they are just the thing I am looking for.

Dr. Shambaugh: I am very much pleased to hear Dr. Freer discuss this subject in his careful, painstaking way. These operations upon the frontal sinus are cases that have been approached in various ways. As all of you know, it is only a few years ago that there was a great deal of discussion as to whether the intra-nasal or the extra-nasal route should be chosen, not only for the frontal sinus but for the maxillary sinuses as well. Most of the men whose operative work was preceded by anatomical study and a careful investigation of the anatomical details, proceeded with the intra-nasal work. The extra-nasal work was taken up more by the general surgeon and by men unacquainted with rhinologic literature.

Rhinologists agree that the intra-nasal route is the route of preference. Very little difficulty, as a rule, is encountered in the intra-nasal route, though there are occasional exceptions in which a complete cure is not obtained by it.

In regard to the frontal sinus I think the greatest difficulty is in getting drainage sufficient for a cure by intra-nasal surgery, and yet, this is the one sinus, above all others, where we wish to avoid an external operation. The anatomy should always be kept in mind, and yet in operating upon the ethmoid cells the anatomic details can not always be followed, because of variations in the structure and arrangement of the ethmoid cells. For instance, take Mosher's method of breaking through into an agger cell. In most cases the agger cell is not present. It is an exceptional cell. Now, as Dr. Freer points out, to break through, in that region, or to attempt to break

through, would carry the operator beyond the ethmoid cells into the orbit. In suggesting the bulla ethmoidalis as the place of entrance in preference to the agger cell, Dr. Freer has given valuable advice. In working on the ethmoid I think a good deal of the danger depends upon the instrument used there. I employ simply a Hartmann's forceps. Probes or curettes may be forced through into the orbit. In a few seconds' time the Hartmann's forceps will take all the cell walls. I don't hesitate—I simply break it through and keep curetting out all the time towards the orbit. I try to leave part of the middle turbinate standing in order to avoid breaking into the cribriform plate. I haven't had the experiences told to Dr. Freer by other operators and have not heard of the cases mentioned. I dare say the orbit is broken into in a good many cases, but the accident has not been followed by any harmful results in my experience, and yet, perhaps it would be wise to be more cautious than has been the usual practice working out that way.

Dr. Brawley: I ask Dr. Freer what his operative method is in the type of case where there are very heavy ethmoidal laminae, either anatomically heavy or thick because of chronic infection. It seems to me that the instruments which he has passed around, while very satisfactory for a majority of the ethmoid bones encountered, would not be suitable for the type mentioned by me.

The Chairman: Is there any further discussion on this paper? If not, I will call upon Dr. Freer to close.

Dr. Freer: Dr. Beck has said that the orbital complications mentioned should have been reported by the men to whom they occurred. Both of the operators are experienced men, who did not blunder, but to publish these cases might have injured their reputations because those inexperienced in the difficulties of the operations performed would not have understood this.

As Dr. Shambaugh stated, the danger of orbital or cerebral complications is slight, not more than from the external operation, if the topography of the region be not only studied, but so well studied that the surgeon has a mental picture of the anatomical relations so fixed in his mind, that he sees where he is going with a mental x-ray. It will not do, however, to say that there is no risk where an operation has to be performed in the neighborhood of the brain and eye.

Among the many implements used by various operators the rasp is the one I regard as the most dangerous, as, even though it is intended to merely cut with a downward motion it must be pushed upward into the sinus to make this motion possible and, as it is a strong, rigid steel instrument, it is risky to wedge it thus upward against the thin posterior cerebral wall which overhangs variously in various sinuses. I have been told of a death from meningitis following the use of the rasp. In addition, as compared to the burr driven by the dental engine, it is a slow and inef-

fective instrument. In my preference for the burr I am in accord with Max Halle of Berlin.

In regard to results obtained from the intra-nasal ventilation and drainage of chronically suppurating antra of Highmore, mentioned by Dr. Shambaugh, I have been unfailingly successful in the cure of the suppuration in the last 10 years since I have intranasally removed the nasal wall of the antrum in the lower meatus after resection of the anterior half of the inferior turbinated body, the instruments used being the nasal trephine, antrum burr and punch forceps; in fact, I have found the maxillary antrum the most satisfactory of all of the sinuses to operate upon for empyema because of the certainty of curing the suppuration and I can see no reason for the continued use of the Caldwell-Luc and Denker operations, since the broad opening in the lower meatus invariably accomplishes a cure in typical cases.

In respect to the intra-nasal frontal sinus operation just displayed, in a small minority of cases it is necessary to not only remove the anterior ethmoidal cells in order to enlarge the exit of the frontal sinus backward, but also to use the burr forward to cut away the internal nasal crest of the frontal bone with the dental engine. These are the cases referred to by Dr. Brawley with eburnated and thick ethmoidal laminae. My curettes, however, will break these away in most cases most effectively and I advise Dr. Brawley to try them. Hardening and thickening of the ethmoid bone takes place especially after preceding operations on the ethmoid cells or in atrophic suppurative conditions. P. Watson Williams says that in the greater number of cases he does not have to use the burr, but at times it is indispensable. The burr is not used until after the frontal sinus ostium has been enlarged posteriorly by removal of the anterior ethmoid cells so that a probe will enter the frontal sinus freely. To place the burr for cutting away the internal nasal crest, look upward along the nasal roof to where the probe disappears from sight in the ostium of the frontal sinus, this is the location of the internal nasal crest. Press the burr forward in this place and the crest is easily cut away. Do not crowd the burr upward against the posterior wall of the sinus. The burrs of Max Halle are excellent for the purpose. The internal nasal crest is called the internal angular process by Mosher. The cutting away of the internal nasal crest with the burr will permit the introduction of my larger, strong, backward cutting curette and I can assure Dr. Brawley that it will cut away thick ethmoid partitions from the sinus down into the nose.

It is in just this type of frontal sinus suppuration, with eburnation of the bone, that the large surgically made opening from the sinus into the nose has a great tendency to close after the intra-nasal operation. For these cases I have devised a rubber drain that may be introduced from the nose and that will stay in place until withdrawn.

The Chairman: The next paper on the program is "Clinical Problems in Connection With Some of

the Complications of Middle Ear Suppuration," by Dr. Shambaugh of Chicago.

Dr. George E. Shambaugh: *Mr. Chairman and Gentlemen:* When the secretary asked me to discuss this question, I felt a little reluctant at first, because the first thought that occurred to me is that this subject is one that has been so thoroughly worked over and so completely expressed in literature, so much better than I could, that it would be somewhat out of place for me to say anything new about this subject. And yet, on the other hand, this fact remains true, that all of these clinical problems, especially those connected with the mastoid, are all new problems to each and every one of us, at some stage or other, until our own experience makes it a practice of our own, and it is certainly apropos that a question as important as the question of the complications of the clinical problems connected with the suppurative diseases of the middle ear, should form a subject for discussion at meetings of this sort at great frequency, so that we can get the individual experiences of the various men and make this knowledge on this subject our own knowledge. The most that I can expect to do, therefore, is simply to express some of my own problems and open up the subject for discussion, and I daresay others have had experiences which have imposed upon them the difficulties that one has to encounter in connection with the suppurative diseases of the middle ear and the complications.

(Paper appears on page 161)

I have here a couple of plates that I would like to have you look at. These are from the same individual. Those plates were taken perhaps a few months ago. These plates (indicating) were taken last Saturday. I just would like to have you look at them and give your opinion about them. I might say, briefly, just what that case is. Here is a boy of, perhaps, fifteen. He came to see me the first thing last winter because he had a sensation of coldness in the ear; no pain; no temperature. Looking at the ear, I could see some slight congestion along the handle of the hammer. The rest of the drum membrane showed very little discoloration. The condition was so slight that I told him to just report back to me in a week or ten days, if the thing proceeded. Next week, or the week after, he came down with the same condition. A few bubbles in the ear and that was all. The congestion in the drum membrane remained about the same. After this thing had gone on about a month that way, I proceeded to incise the drum membrane and I drew out a thin mucus discharge from the ear. I expected him to get well, as we find in many of those cases where there is a persistence of secretion, instead of infection, you just have to blow out that secretion and that will be all. But, to my surprise, the boy came back with the same condition again. There was no pain and no temperature. I again incised the drum membrane and pulled out the same stuff. After that thing had been going on for a while, and after I had done three incisions to the drum membrane the drum

membrane remains open. There is more discharge. He never has a rise in temperature. The tenderness over the mastoid cannot be estimated at all. Then I had this x-ray plate taken. The interpretation placed upon that by myself and Dr. Potter, who has had a good deal of experience, is that that was a mastoid filled with secretion but no softening of the mastoid process. The boy comes back to me again last week. He has the perforation practically closed. Once in a while there is a little discharge from it. Then I had the other plate made. It looks about like the day before. My impression is that he will have to have a mastoid operation, but I have not done it yet.

The Chairman: The discussion will be opened by Dr. Joseph Beck.

Dr. Beck: The subject presented seems to me to have one or two important points, particularly that of mastoid abscess without symptoms. I would like to speak about the importance of roentgenograms in connection with that point. The doctor covered his subject so thoroughly that any discussion on the personal experiences that one has had with that same condition is unnecessary. Roentgenograms will not only show that a mastoid is involved but it will show the pathology or type of involvement. Dr. Potter, who is an excellent roentgenologist, and myself have had a lengthy discussion on this subject, over x-ray pictures, to see if we could determine what pathological processes there exists within the mastoid. I have shown him plates and told him of the cases and the conditions that I found at the operation, to see if we could determine whether we had a mastoiditis with a breaking down of the mastoid cells or the mastoiditis of a graver type, in which the cells were still intact. Those are the more difficult cases to cure.

You will find that if you study these pictures in series, for instance of two or three days, the cells are very clearly defined and they are quite free from pus. The cells are, you might say, almost normal to the x-ray pictures and the partitions are bigger. They are more defined. You can outline the cell partition and that is due to the fact that they are pathological.

In connection with the infection beyond the confines of the mastoid, I think the doctor himself has had cases which he related to me, and I have had them, extending way in the occipital region. You find, often, if you have an x-ray picture that there are cells that can be clearly shown and one of those cells is bridged up and gives rise to recurring temperature and pain and that region must be reoperated on.

The questions of ligation of the jugular in sinus thrombosis are not yet settled because so many cases get well without the ligation, but I think the safe way is to ligate the jugular.

The Chairman: The paper is open for discussion. Is there any further discussion on this paper?

Dr. Allport: The two salient features of Dr. Shambaugh's paper are, in the first place, cases where

we are, perhaps, led into operating unnecessarily and, in the second place, cases we do not operate on where it is necessary. Let us take the first, for instance, where we are led into operating on cases that are not necessary. A good many cases of middle ear infection are, of course, accompanied by symptoms that lead us to feel that it is necessary to operate, and yet we know, as a matter of experience, that if we are conservative and study the case carefully and watch it from day to day, a good many of these cases will get along without an operation at all. This involves a careful study of the case from all points of view. It involves a careful inspection of the case from day to day, as regards the appearance of the meatus and the drum head, even after a thorough opening of the drum head has been made. Take many of these cases and they have constant swelling and redness of the meatus, especially the upper and posterior walls. In fact, I usually expect to see swelling and redness and edema here, long before I see it over the external meatus. Then we should carefully examine the condition of the patient from day to day; his temperature, particularly, watching it to see if there is a constant elevation of temperature with, perhaps, an increasing height from day to day. And then I place a great deal of dependence upon the blood count, and the general condition of the patient from day to day; his temperature, particularly, watching it to see if there is a constant elevation of temperature with, perhaps an increasing height from day to day. And then I place a great deal of dependence upon the blood count, and the general condition of the patient; pain, irritability, etc.

Then, again, we have those cases all of us see where we do not operate for a while and yet the patients don't get well. The symptoms are very illy defined. The blood count is not bad, the temperature is not bad and still the discharge from the ear does not cease and there is constant slight elevation of temperature. Very likely in those cases there is no external evidence of disease at all, that is, you can handle the mastoid process easily and comfortably to the patient. Now, those cases hang fire for a long time and ultimately we are forced into a corner where there does not seem to be anything to do but to operate and we operate on those cases and we find, frequently, a most destructive condition, and when we open the mastoid, we find that we should have operated a long time before.

Where the discharge is, we will say, of a non-streptococcic nature, we all feel that we can wait; but where the discharge is of a streptococcic nature, we feel that we must be on the alert and not be caught napping.

Now, there seems to have been some question about secondary operation. We operate for mastoid in the first place and obtain an appreciable amount of relief and then we begin to have symptoms again and we reoperate and find that we have not opened some cells that we should have opened at the original operation. Now, of course, the only thing to do is to be

extremely careful that our original operation is thorough. I make a practice after I get through with my operation to feel around here and there, and every once in a while I will find that my fussing around after the operation is apparently over, is rewarded by unearthing one or more unsuspected pathological cells.

I don't want to be always harping on one thing, but I have found that I am more apt to open all of the cells by the use of the burr than I am by the use of the curette. That is, I think I find more pathological cells with the burr than I do with any other instrument.

So far as the x-ray is concerned, I believe that we have here a field that is worthy of investigation. I, myself, have never been able to achieve any very great success in the use of trans-illumination, and I have not, as yet, had very much assistance from the x-ray plates. Of course, that may be because I am not experienced enough in interpreting pictures as I see them. I am rather surprised when I hear Beck and the others who find the x-ray to be of so much assistance to them in the detection of these cases. Nevertheless, I have no doubt that these gentlemen are very much more skilled in the interpretation of these plates than I am and doubtless they can see things that I cannot see. I, therefore, feel that we should all of us, at all events, give this method of assistance all of the attention it deserves. I have no doubt that as we become more skillful in interpreting the pictures, we shall find things that we do not find at the present time.

Dr. R. J. Tivnen: The discussion of Dr. Shambaugh's paper has singularly worked down to the phase of the indications for operation on the mastoid cell. Speaking on that phase of the subject, why I wish to express my hearty approval of Dr. Shambaugh's position, namely, that the proofs of quite a large number of these cases is the continuation of the symptoms, outside of some few mastoid cases where the indications for operative interference are clear. It becomes a question of the study of the individual symptoms from day to day. For instance, just one point that he mentioned along that line, was the presence of tenderness. I agree with him. I have been very much gratified to see it proven that that symptom alone may be disregarded for some considerable time.

I regard the presence of a profuse discharge existing for a period of two weeks, in these cases, as almost a positive indication for opening the mastoid. Also, on the question of operative interference, the point made by Dr. Allport is a guide in determining after all, whether I should interfere rather early or wait some little time. The question of the streptococcus in the discharge, is certainly, in a large number of cases, an indication of more hasty operation than if you have some of the lesser bacterial causes. As to the blood count or the temperature, personally, I have not been able to have the satisfaction from both those clinical factors that I think I should have.

One of the things that would determine me is the age of my patient. The young child and the old is an important point to reckon with as to whether you should institute an operative procedure or not.

There is this to be said about the x-ray. It is very difficult to get a man who knows how to take an x-ray picture. In Chicago we have Dr. Potter, who is very expert at this, but Dr. Potter stands almost alone in that work in Chicago. If it were not for the enthusiasm of such men as Dr. Beck on the x-ray side, I should have lost heart in the thing entirely.

The Chairman: I will ask Dr. Shambaugh to close.

Dr. Shambaugh: I think, from the discussion, it is quite clear to everyone that we have to deal with a very complex clinical problem, and one which we cannot decide off-hand. We see so many cases of mastoiditis where the question of operation is very well passed over. On the other hand, we see cases where the symptoms and the discomfort are so slight that the symptoms might be easily overlooked, and it is only by watching carefully for changes that we can come to the conclusion as to who should be operated on. We have to remember that we must be very careful in giving a diagnosis to a patient. It is very unusual that we are able to say to a patient, "You cannot get well without an operation." I would not make a reply like that; a positive reply. We can simply say in our judgment, the best thing to do is to operate. I remember a case a few years ago where a man had a running ear; an abscess appearing in two or three different places in the orbit. He refused operation. That man got well. He had a thrombosis of the lateral sinus if he had anything the matter with him and he went on and got well. I remember a case where a girl came back from Europe. She had a mastoid abscess and when she got here the thing had broken through the external canal. I said, "You have got a mastoid abscess." She said, "No." She got well without an operation.

As to the x-ray, I think the idea which the general medical public has in regard to the possibility of the advantages of the x-ray plate, is still very crude.

The Chairman: The next paper on the program is "Sympathetic Ophthalmia," by Dr. Robert Blue of Chicago.

Dr. Robert Blue: It is not my purpose to bring you anything new on the subject for which I have been announced:

(Paper appears on page 163)

The Chairman: The next paper on the program is the "Treatment of Tuberculosis of the Larynx," by Dr. Edmonson of Mt. Vernon.

Dr. Olstrom: I would like to know what the results are, that is, if there are any ultimate results of the course of the disease. These things are all very pretty to do, but what are the results? If a man has a tubercular involvement of the epiglottis, he is in pretty bad shape. Cutting out the epiglottis is doing something. What is the result?

Dr. Beck: The doctor alluded to the etiological

factor of tuberculosis of the larynx. I understood him to say that the tonsils were primarily the source of infection of tuberculosis, and that about four per cent of tonsils have tuberculosis in them. If this means the tonsils of tubercular patients, I think the percentage is much larger, but if it is tuberculosis in tonsils of non-tubercular patients, the percentage is very much over estimated. It is practically scarcely ever found. I have a large number of tonsils of patients who had chronic infection, with temperatures in the afternoon, and yet none of those ever showed a single evidence of tuberculosis, or true tubercular disease in the tonsils.

The Chairman: Any further discussion? If not, I will ask Dr. Edmonson to close.

Dr. Edmonson: As to the result in removal of the epiglottis. It is very much better to remove the epiglottis and let your patient die that way, than to see him starve to death by inches. You reach the point where cocaine, morphin and the rest of the drugs have no effect on your patient and he cannot swallow, and this is done as a matter of letting the patient die in comfort and not let him starve to death. The patient is bound to be dead in a week or so, without the operation. He may live four, five or six or eight weeks, with the operation. It is a matter of extending his life a little. In the earlier stages you don't remove the epiglottis. It is only in extremes.

Now as to the proper percentage in tonsils. I haven't made any personal examination at all, but from the Eye, Ear, Nose and Throat Department of the St. Luke's Hospital in Chicago, the report came down, which was that from two to four per cent of tonsils were tubercular. While in the west, I took the matter up with Dr. Lockter and Dr. Lockter insists on four per cent. I told him that it has not been my observation that it was such a big number, but he insists that four per cent is a conservative estimate, in his experience. I don't know whether he is quoting authority or making a general observation.

The Chairman: The next paper will be that of Dr. Cavanaugh on the "Non Suppurative Sinus Diseases in Relation to the Eye."

(Paper appears on page 166)

The Chairman: The discussion on this paper will be opened by Dr. R. J. Tivnen.

Dr. Tivnen: *Mr. President, Gentlemen:* Even a superficial knowledge of the anatomical relations of those structures, would easily convince one how simple it would be for infections to travel from those cavities into the orbit that involves the eye structures.

The indictment against the sinuses of the suppurative types, as causing ocular troubles, of course, is no longer disputed. That indictment has been proven over and over again, and the proof of it all has been that operative measures instituted on the particular sinus involved, has brought the expected good results.

Now, however, when you get to the other phase

of the subject, the nonsuppurative type of sinus trouble in relation to eye troubles, you enter a field that is not quite so clear, perhaps. It is true that we have many cases of abstract eye trouble, such, for instance, as headaches, dulling of eyesight, inability for concentration for eye work and for the demands of anything bordering on an excessive demand upon the eyes. It has not been my experience, however, to the extent that Dr. Cavanaugh said, that fifty per cent of the eye cases would be chargeable to that particular type of trouble but that type of case does give us considerable number of eye cases.

My own experience along this line has not been so extensive, but I have come to this conclusion, that of all the different sinuses, it would seem to me that the ethmoids were the ones that were more often at the bottom of the trouble. If I have an abstract trouble with the eyes, that I am unable to solve, I feel that my work is not complete until I have submitted that case to a rhinologist for his expert opinion as to the likelihood of the sinuses contributing toward the trouble.

The Chairman: The paper is open for general discussion.

Dr. Brawley: It seems to me, in dealing with this subject, that the key note should be co-operation, as Dr. Tivnen said. If the eye man does not consider himself qualified to make a thorough diagnosis of the nasal or maxillary sinus condition, he can, at least qualify himself to discover the more apparent connections, and he can learn enough about them, combined with the suspicions or the symptoms, to determine whether it is necessary to go on and have the opinion of an expert rhinologist.

The percentage of fifty per cent of eye diseases being due to nasal troubles—of course, I may have misunderstood Dr. Cavanaugh, but that is entirely out of proportion. I cannot give the percentage, but it is nearer ten than it is fifty. There are a great many of those cases that have been charged to nasal conditions, in which the various other conditions, in the general system, have not been eliminated. Such conditions as toxemias from other sources of the body must be eliminated before we can say that the nose can be charged directly, in any given case.

Dr. Shambaugh: The non-suppurative diseases of these sinuses are, to me, the most interesting. We all recognize the non-suppurative diseases of the ethmoid, very often, from the symptoms, even before inspection of the nose at all, and can come close to a diagnosis. Attacks of sneezing, a feeling of cold in the head, a voice as though a person was suffering from a head cold—I have been surprised in some of these cases, where I thought that there was a hypertrophied ethmoiditis there, to find, on inspection of the case, such little evidences of that condition.

Last week I took care of two cases, both of them suffering pains above and below the eyes. No temperature. Neither case was preceded by a head cold. In neither case was the middle turbinate enlarged. You could see the outlines of the structures of the

middle meatus. There was no outward obstruction at all. In neither case was there any secretion in the nose. Scrutinizing the case very carefully, every day for a week, there was absolutely no evidence of any pus at any time in the nose. Trans-illumination threw a shadow over it. I wasn't able to get a probe into either frontal sinus. I would like to ask Dr. Cavanaugh, when he spoke about the x-ray throwing a shadow in these non-suppurative diseases of the frontal sinus, how he accounted for the shadow there in this case. My impression is that there is secretion in the frontal sinus. That a person should have large inflammatory reaction in the mucous membrane, running over the frontal sinus, produce a shadow, and yet not to be associated with secretion, does not quite satisfy me. I would like to ask Dr. Cavanaugh what his interpretation was, if I understood him correctly, when he spoke about a shadow being unnecessary where there were no secretions.

Dr. Woodruff: I was, like Dr. Brawley, very much surprised with Dr. Cavanaugh's statement regarding the number of eye diseases due to sinus diseases. I am somewhat in this position. If some good authority on this subject can show us any different number, or any number, of such difficult diseases as glaucoma and uveitis and such definite conditions as those associated with non-suppurative sinus diseases, and cured them by proper procedure directed to the sinus, if we can have any number of those demonstrated to us, then we have got something definite, but as long as the symptom is merely a headache, why, we are limited in our progress, it seems to me, in making this connection between these two conditions. Before the era of sinus investigation, headaches were very frequently relieved by treatment of the nose. Between the nose and the head, I am anxiously waiting for a more definite demonstration as to the more intimate relationship between the eye and the sinuses.

Dr. Allport: I desire to say that I didn't so understand Dr. Cavanaugh's statement, that fifty per cent of all eye troubles were dependent upon what you might call nasal conditions. I understood Dr. Cavanaugh to say this: That about fifty per cent of the cases that were referred to him to discover if possibly he might find an etiological factor connecting the two; in the fifty per cent of those referred cases, that he had discovered nasal conditions accounting for the ocular condition. If that was his statement, and that is what I understood him to say, I see no reason for doubting the record at all. I suppose there is scarcely a day that Dr. Brawley does not examine quite a number of cases for me, to see if he can discover a connection between the nose and the eye, and I should say that in about half the cases that I sent in to Dr. Brawley for examination, we find such a condition. But, of course, I think Dr. Cavanaugh would hardly mean that fifty per cent of all eye diseases were dependent upon the sinus conditions.

I am sure we are all of us forced to realize a very distinct connection between nasal conditions and

ocular conditions. In fact, as a matter of routine, in our office, we do not feel very well satisfied with our examination unless we do have a nasal examination, especially in cases where there is the slightest degree of doubt as to the etiology. Presumably there is no question but what a great many of the ocular conditions are dependent upon nasal conditions, and I should like to say, in my turn, that a very large majority of those nasal conditions, in my opinion, are not dependent upon local conditions at all, but on general conditions.

The Chairman: Dr. Cavanaugh, you may close.

Dr. Cavanaugh: I want to thank Dr. Allport for helping me out of this situation. He seems to have been the only one that understood my remarks. Far be it from me to get up here among so many ophthalmologists and make the statement that fifty per cent of the eye cases are due to sinus diseases. If they are, I don't know anything about it. But fifty per cent of the cases that I have seen, as Dr. Allport said, that have been referred to me, have been responsible for some of those conditions.

Regarding the shadows, as Dr. Shambaugh spoke about, produced in the x-ray plate, I am not in a position to answer that question exactly, because I do not know. The only thing I do know is that in this case, there was absolutely no secretion to be found, yet over that side there was a shadow.

Dr. Woodruff asked me whether in certain cases of glaucoma I would make the statement if, after operating on the non-suppurative type, any of them were benefited. I haven't had any such case, but I am following up this non-suppurative type and I might say that I received the inclination to do so, through Dr. Brawley's articles, which I have read, and I believe he was one of the first to bring forth the affect of non-suppurative types upon eye diseases. I have seen a number of them, and it has given me inspiration to work along these lines, and I think that many of us overlook these non-suppurative types. Men look into the nose and they see a practically normal condition, and they say "normal nose." I believe that many conditions that we have to leave unaccounted for are due to something hidden, and I believe that it requires a more thorough work along this line.

I appreciate what the members have said, and I thank you.

The Chairman: The next paper on the program will be "The Blind Spot," by Dr. Harry S. Gradle.

(Paper appears on page 170)

The Chairman: The next paper on the program is "Syphilis of Internal Ear," by Dr. J. H. Mundt.

(Paper appears on page 171)

The Chairman: The next paper on the program is that of Dr. A. M. Corwin of Chicago, "Causes for Catching Cold."

(Extemporaneous—no paper)

The Chairman: The next paper on the program is by Dr. Prince, "A New Conception in Cataract Extraction."

(Extemporaneous—no paper)

The Chairman: I wish to make an announcement in reference to a paper which I have in my possession by Dr. Friedberg of Chicago, on "Foreign Bodies in the Respiratory Tract." The doctor, at the last moment, was unable to come. If you think well of it, you may make a motion that this paper be read by title.

(Paper appears on page 175)

The Chairman: The next paper is that of Dr. Frank Brawley, "Further Consideration of the Tonsils as a Source of Focal Infections."

(Paper appears on page 178)

The Chairman: The paper is open for discussion.

Dr. Allport: Mr. Chairman, I would like to narrate an interesting and instructive case, which was under my observation, that, I think, will bear upon this subject very closely. The patient was a mature man. Early in life he was subject to some attacks of tonsillitis. That, however, passed away, and at the present time this man is apparently a perfectly healthy man. Last summer he went away and came back to Chicago in perfectly good health in every respect. Three days after he returned to Chicago, he was taken with a lame back, which was supposed to be lumbago. After trying various home remedies, he went to an eminent internist and the internist, without any special examination, agreed with the home diagnosis that it was a case of lumbago or rheumatism, or whatever it was, and prescribed certain remedies. The patient got worse. After some weeks he went back to the physician and he again prescribed. Some weeks elapsed, perhaps a couple of months. Meanwhile the patient was getting worse and worse all the time. Finally the physician told the patient that he must go into a hospital and have a thorough examination made. He went into the hospital and had a hospital examination made, and the physician said that the gentleman was a perfect specimen and that there was nothing the matter with him at all except that he had a relaxation of the small iliac ligament, a very common disease. He prescribed a surcingle to be strapped around the waist, to relieve that condition. The surcingle was used, without any result. Various other appliances were used without any benefit. Finally, another surgeon was called in and he prescribed rest in bed for months, and appliances to strap the hips together and a very rigorous diet, and no good was accomplished. Finally the patient came into our observation, in the office. Dr. Brawley squeezed out some of the contents of the tonsil—I might say that the tonsils looked well; they didn't look large; looked rather small. Nevertheless, Dr. Brawley squeezed out some of the contents and it was found that streptococcus existed. This was done twice. The pathological part was sent to the laboratory and injected into a rabbit, but nothing came of it. After a while, this patient went through various x-ray examinations. Being a fleshy man, it was difficult to get an accurate picture. However, after nine efforts a distinct arthritis was discovered in the right sacroiliac joint, in the lower portion. There is no question about that. It was examined by a number

of skilled men and there was no question about the x-ray plates. Not being able to find any other source of trouble, Dr. Brawley took both tonsils out. I was present at the time of the operation, and when the left tonsil was squeezed by the forceps, pus escaped. These tonsils were sent to the laboratory and found to be streptococcic. The soreness is practically disappearing and the patient is recovering. I merely cited this case as an evidence, briefly, of what the patient can undergo in the course of nine months in a case of this kind and what may result from hitting the nail on the head and getting at the exact diagnosis and the exact cure.

The Chairman: The next paper by Dr. Boot, "The Diagnosis of Otosclerosis."

(Paper appears on page 183)

Society Proceedings

CASS AND MORGAN COUNTIES

The fourth annual picnic of the Cass and Morgan County Medical Society was held August 12, 1915 at the country home of D. Carl E. Black, of Jacksonville, Illinois. The day was fine for the occasion and there were about two hundred and seventy-five people present, including the friends and families of the physicians.

The meeting was called to order by Dr. Day, president of the Cass County Medical Society; after the announcement of the meeting Dr. Stacey, president of the Morgan County Medical Society took the chair and presided during the meeting.

Dr. and Mrs. Geo. W. Crile, of Cleveland, Ohio, were our special guests and Dr. Crile delivered an informal address on "The Goiter Question."

Fourteen physicians were present from Cass county; thirty from Sangamon; fourteen other counties were represented by forty-one members.

Dr. Crile, during his lecture on "The Goiter Question," brought out the following points: His discourse being informal, the following was taken by notes, and is not intended to give the whole of his lecture. Neither is it given in the language of the speaker.

He stated that goiter is by no means equally distributed in all proportions of the world. It is especially common among the inhabitants of the mountains, and the fresh water lakes; while the inhabitants of the seashore are not to any extent effected by this condition. He stated that there is evidently a lack of adjustment of man to his surroundings; that there must be some defect in the water or something peculiar to the climate to which man has not been able to adjust himself. Goiter is not only a disadvantage because of the internal effects of the disease; it is often insignificant in size, but often large, and causes much discomfort, either from external effects or internal pressure. Many people are troubled very much on account of the cosmetic effects of the disease. Many patients come for treatment for goiter, principally for cosmetic effect.

Goiter often develops into cancer. The risk of adenomata of the thyroid becoming carcinomatous when it develops in the cancer period is about as great as the risk of adenomata of the breast. Cancer of the thyroid is only cured by operation, where the condition is not diagnosed before operation, but where it is proven to be of this nature after operation is performed.

Must the human race go on without any hope on the goiter question? From the knowledge that we now have, there is almost an answer to that question. Goiter is not increased by the change in man, but from the change of the crusts of the earth. The salts of the sea came from the land, by the continuous washing of the hills into the lowlands. The distribution of salts of iodine is greatly diminished in all food products of the hills in proportion to the amount of iodine in the food products of the low lands. Research in agriculture has shown that the seaside foods are more full of iodine than the food on the hills. It is reasonable to suppose that the prevalence of goiter is very much influenced by the distribution of the salts of iodine in the food product. The thyroid gland reacts on iodine by storing and changing so it can be used in metabolism. It might be supposed that the lack of iodine is the cause of the enlargement of the gland to make up for the defect due to the insufficient amount of iodine. Then, if iodine is given to the child, it may prevent the development of goiter. Salt should be given to man and animals to supply the shortage of salt which has been washed into the sea. If iodine is properly given to children, it will prevent the development of goiter; also if iodine is given to the pregnant woman, the development of goiter will not occur.

It has been demonstrated by research in beriberi that this disease was distributed over the riceland, and also that people using refined rice develop the disease, when people using the whole rice did not develop the disease; and also if the husk and the kernel of the rice were used with refined rice that the disease did not develop. If this is true with beriberi, that the disease is due to a shortage of a certain portion of the food, why can it not be true in goiter?

If this is so, then why wait to give iodine to children to prevent goiter, or in other conditions where goiter is prone to develop. Knowing this, then we have the reason established, why good results were obtained by the old practitioners by giving iodine; then if we would give iodine to every child in the goiter region, in every case of infectious disease or exhaustion and in the early stages of pregnancy we would expect to have a great reduction in the number of cases of goiter. Salts can be given to man in various ways without much danger but iodine must be given cautiously. Iodine in over doses given for a long period of time causes serious disturbances. Exophthalmic symptoms are exactly the same as the effects produced by the excessive and prolonged use of iodine. Exophthalmic goiter is prone to produce severe symptoms and is the cause of early death in

many people. Exophthalmic goiter may follow conditions of fear, worry, and overwork combined. It may also be caused by infection and auto-intoxication. A very interesting condition is the close relation of Graves' disease to tuberculosis; barring the lung findings, and the exophthalmia, it is very hard to determine or distinguish any great difference in the two diseases. In both conditions we have the tremor, rapid respiration, palpitation of the heart, the flush, nervousness, and all the symptoms in either case, except the exophthalmos, and the pulmonary findings. By observation at autopsy, excluding lung findings are found very similar. In either case there is a driving of the kinetic system to extreme action. By over emotion we have the same driving with a similar effect. Graves' disease in the incipient state is often taken for tuberculosis and vice versa. The treatment of exophthalmic goiter is very important. No case should be given thyroid extract, neither should any case be given iodine. Another thing to be considered is the ambition of the young girl in high school during the period of her expansion into womanhood. She often needs rest, and this should be insisted upon, although it is very difficult to get the patient to take a rest. It is difficult to get a normal woman to rest, and more difficult to get one whose nervous system is tempered to a high pitch by the effects of exophthalmic goiter. Rest must be taken before the real symptoms of exophthalmic goiter appear. The removal of part of the gland is certainly a great advantage when patient shows the early symptoms of exophthalmic goiter. This should be done by the anoci-association method; patient being anesthetized by nitrous oxide and carried quietly to the operating room without excitement and the gland removed; the operation performed in a way to produce the least amount of shock possible. The patient then, taken quietly back to her bed, awakes and finds herself in her own bed with only her nurse, and without any knowledge of what has happened. The condition of emotion is certainly reduced to the minimum, and the best results obtained by this method.

The subject was discussed by the following physicians, who expressed their appreciation of Dr. Crile's paper, and also expressed their appreciation of the meeting as a whole. Everybody seemed to have enjoyed the picnic very much. Dr. Collins, of Peoria, lead the discussion. Others in order as given below: Dr. Black, of Jacksonville; Dr. Munson, of Springfield; Dr. Mammen, of Bloomington; Dr. Don Deal, of Springfield; Dr. Brittin, of Athens; Dr. Norbury, of Springfield; Dr. Patton, of Springfield; Dr. Bowe, of Jacksonville; Dr. Sloan, of Bloomington; Dr. Pitner, of Jacksonville.

In closing, Dr. Crile spoke of the conditions in the war zone in Europe, stating that it happened to be his duty as a surgeon in charge of a hospital, to care for the wounded and observe what was going on. He stated that it was amazing, and that a man cannot realize what is happening, in any way, except by experience. He said his experience gave him a

look into a crater where the people, the product of civilization which it took years to build, are being thrown to destruction.

It is a horrible situation to see the men of the universities of Germany and the other countries now on the firing line. The brains of many of them are now fertilizing the soil of Europe. There are no tears in Belgium at the present time. Men no longer think of their possessions; no longer think of their family relations; all this is torn down and there is nothing before them except the great struggle of war. Under most unsanitary conditions men are tugging away to defend their stand on the firing line, one man every three feet, with no chance for the wounded to be carried off during the day; they have to be dragged off at night. Men are willingly and strenuously doing things that they could not have been induced to do under any circumstances in times of peace.

A vote of thanks was extended to Dr. Black for his hospitality and to Dr. Crile for his address and the meeting adjourned. Committee for the joint meeting: J. L. Day, Virginia; G. F. Soule, Beardstown; W. R. Blackburn, Virginia; G. H. Stacy, G. R. Bradley and T. G. McLin, Jacksonville.

COOK COUNTY

CHICAGO OPHTHALMOLOGICAL SOCIETY.

A regular meeting was held May 17, 1915, with the president, Dr. Richard J. Tivnen, in the chair.

Dr. Frank Brawley presented two clinical cases. The first case was a seton operation for glaucoma.

This case was operated on May 4, the tension now being slightly raised, the tonometer showing 59 mm. There had been no pain since the operation and the eye is practically quiet. The treatment consists of atropin and salicylates, her own physician taking care of the diet and hygiene.

The second case shown by Dr. Brawley was one of proptosis of the globe downward and upward. There was a floating swelling over the forehead. On examination he found a hypoplastic ethmoiditis, no pus, and made the diagnosis of mucocele. When the sinus was opened no connection with the nose was found. Where the frontal nasal duct should have been, there was found about two cm. of cancellous bone, the floor of the frontal sinus being necrotic. This was removed and the space thoroughly curetted and drained. The operation was performed April 16, practically a month ago. The interesting feature of the case consists in the fact that he was not conscious of any double vision up to the time of the operation, but the rapid restoration of the eye produced a diplopia. At the present time the muscle balance is normal.

Dr. Clark W. Hawley presented the case of a young man who was making experiments with a test tube. There was an explosion and a large mass of material in the tube was thrown into the lower sulcus of the eye, producing a severe burning. This material had to be scraped away. After a time healing went on, leaving a symblepharon which extended up to the ex-

tent of the burn on the cornea. When the patient looked up the lower lid was carried up to the cornea. The aim was to relieve the symblepharon, which was removed three weeks ago in the hospital. It was very much like a pterygium extending over quite a large portion of the lower lid and a portion of the cornea. After dissecting off the pterygium from the cornea an incision was begun at the lower border upward and over the center of the eye-ball, carrying it well up on top of the eye-ball. Two stitches were placed in the conjunctiva before cutting it off. The part dissected off was about three mm. wide, and the dissection was carried to the nasal side of the eyeball. Two or three stitches were then put in the lower portion of the flap as it was necessary to fasten it somewhere. That allowed a stretching of the conjunctival flap considerably and the lower lid is now entirely free from the cornea, with no symblepharon. Dr. Hawley stated that the next operation would probably be to try to restore the sulcus for the lower lid. At the present time the condition is very much improved, and the case was shown so that it may be shown later in the second stage.

Mr. Max Poser, Rochester, New York, spoke on the evolution of ophthalmic lenses, describing a new system of designating their powers. His remarks were illustrated by numerous stereopticon slides.

A vote of thanks was extended to Mr. Poser for his instructive lecture.

PAUL GUILFORD, Secretary.

CHICAGO LARYNGOLOGICAL AND OTOLOGICAL SOCIETY.

Regular Meeting, held February 16, 1915, with the president, Dr. George W. Boot, in the chair.

SPECIMEN OF LYMPHANGIOMA.

Dr. J. R. Fletcher showed a specimen of lymphangioma which was removed in August, 1914, from a boy, sixteen years of age. During treatment by another physician it was noted that there was a great deal of hemorrhage, and that the growths were rather solid. The conclusion was reached that the trouble was serious. Sections showed a myxofibroma. Sections made by the speaker were pronounced to be lymphangioma. The whole nose was filled with a great mass. X-Ray pictures were taken, showing the antrum, nasal, post-nasal and spheno-maxillary fossae filled with the mass. When operating, Dr. Fletcher went into the antrum underneath the cheek. From there he took down the entire lateral nasal wall and took out the tumor mass from the nose. This caused terrific hemorrhage. Then he dissected toward the tumor protruding under the zygoma, and got out the smaller of two large masses. Another large mass was felt, which he loosened all around, so that it was movable with the forceps. Traction would not bring it because it proved to be attached to a large mass in the post-nasal space. He then loosened the latter from its attachments, which were broad, and removed it with a No. 8 wire snare, releasing thus the mass in the spheno-maxillary fossa. Having also curetted out

the antrum, he supposed he had all of the tumor out. Three weeks afterwards he found another mass occupying the sphenoid. He could go three-fourths of the way around it, as though it grew upward from the floor. With a curved knife he liberated the mass and got it out. This mass was about the size of the end of his thumb. He presumed that it had broken down the wall. On looking into the nose now, after healing, he could see a mass protruded, and that it is a peculiar lip of bone, which is the floor of the sphenoid. It seemed to have developed between the post-nasal and the sphenoid in the masses. It may be malignant, but that question will be settled in the near future. The speaker hoped to refer to the case at a later meeting, and give the result of such examination.

DEMONSTRATION OF A NEW HEARING TUBE.

Dr. Robert Sonnenschein demonstrated a hearing tube which appeared to be very satisfactory. There are a number of such tubes on the market, of woven material over wire coils, but these are very large. There is also in this country one metal hearing tube, which is, however, much larger than the one he presented, and does not transmit sound quite so well. The speaker's attention was called to the tube he showed by a patient who has a very marked otosclerosis, in which the nerve is markedly affected. This patient is selling this tube as a means of livelihood. Without the tube he does not hear whisper at all. With it he can hear the ordinary low tone very distinctly, and the ordinary conversational tone very loudly.

The advantages of the tube are: First, it is made of oxidized copper and does not corrode. Second, both ends are detachable and can be boiled. Third, the tube is so small that it can be carried very easily. It is flexible. So far as the speaker knows, it has only one disadvantage, namely, its cost. It is an English product and somewhat expensive. The majority of tubes cost about five dollars, but this one will be ten dollars, less twenty-five per cent to physicians. If the latter is willing to forego a commission, the patient can have it for \$7.50. The tube appealed to Dr. Sonnenschein because even the very slightest whisper, spoken in the midst of a noisy room, can be very easily heard by the patient above referred to, when using it.

THE INFERIOR TURBINATE.

Dr. John A. Cavanaugh is not of the opinion that a part of the inferior turbinate forms a portion of the lateral nasal wall, as all anatomists would have us believe, for he has not been able to find, even in the fetus, the signs of a suture, which he thinks one would find if it helped to form a part of this wall. He thinks the bone develops in the rudimentary turbinate and unites to the lateral wall, thus causing a thickening of this area, and with the antrum developing on one side and the nasal cavity on the other causes the lateral wall to thin out and gives it the

appearance of a part of the inferior turbinate bone. There seems to be but little change in the relations of the inferior turbinates and the surrounding walls from birth to the fourth year, but after this time there is a greater prominence of these bodies. He has measured the thickness of the mucous membrane in children from four to ten years, and found it to vary from 1 to 3 mm. All turbinates are thickened in the posterior portion. The bony portion of the inferior turbinate at birth is well developed, being from 18 to 20 mm. long, and from 2 to 4 mm. in width. The free edge of the bone is corrugated and measures about 2 mm. thick; as it approaches the attached portion, it thins out from 0.5 to 1 mm. in thickness.

The adult inferior turbinate does not vary from that of the child, except in its size, being much larger. Its length varies from 38 mm. to 48 mm. Some are long and narrow; others short and wide. Some extend into the nasal cavity in a slant from the lateral wall; others in a scroll effect, while others lie almost on a horizontal plane. From the opening of the nostril to the anterior end of the turbinate measures from 16 to 20 mm. The width of the bony part of the turbinate varies from 12 to 16 mm. The free edge of the bony turbinate is from 2 to 3 mm. thick, and is the dense part of this body. The mucous membrane covering the turbinate body varies in thickness from 2 mm. to 9 mm.

The blood supply is derived from branches of the anterior ethmoidal arteries anteriorly, and the sphenopalatine artery posteriorly.

Dr. Cavanaugh believes the turbinated bodies have not received the consideration they should, because he thinks they mean more to the human economy than most rhinologists would have us believe. There are three types of turbinates which attract attention, excluding, of course, the malignant and non-malignant tumor types. These are the intumescent, hypertrophy of the mucous membrane, and hypertrophy of the bony part, the mucous membrane being practically normal.

He thinks the rhinologist is responsible for much of the slaughtering of the inferior turbinate, and he thinks it is time we should accept a means of caring for these conditions in a way that will not interfere with the normal function of these bodies. He considers it a great exception where an inferior turbinate should be totally removed. The septum should always be our point of attack if by so doing we can preserve a turbinate and accomplish our purpose.

Operations on the turbinates are many, but the cautery seems to him to be the one most universally used. The chemical cautery, in his opinion, is not worthy of consideration. The galvano-cautery is only of value in the turgescent type. There are many advocates of this treatment, but the speaker thinks it has many faults. It gives the charlatan an opportunity to use it as a cure-all for nasal diseases, causing destruction of functional membrane. It destroys normal tissue for some distance from the field of application, and it leaves a large area of non-func-

tionating scar tissue, with a great liability to a synechia. The speaker then made reference to the methods of treatment advocated by Douglas, Westerman, Horn, A. H. Andrews, Freer, and Yankauer.

The method of operation Dr. Cavanaugh advocates is as follows: He uses a ten per cent cocaine and 1:1000 adrenalin chlor. If the entire membrane is at fault, whether it be intumescence or hypertrophy, he makes an incision from behind forward at the lower and internal surface down to the bone, then a corresponding incision on the lower and outer side, which makes somewhat of a triangular piece of mucous membrane with its apex attached to the bone; elevates the mucous membrane with a sharp elevator from the bone on the outer and inner side for one-eighth inch from the anterior surface all along the long axis of the turbinate. He then takes a Myles' alligator biting forceps and bites out a part of the bone with the triangular mucous membrane area, which can be done with but little difficulty. When this is removed the Yankauer crotch forcep is used to draw the cut edges together to make sure that no tension will be necessary on the stitches which pull the flaps together. Silk is used instead of catgut for suturing. When this is done, he places on the under and inner sides a piece of cotton or gauze removing it in twenty-four hours. The speaker has packed some cases without sewing, but the results have not been as satisfactory. This method of dealing with the turbinate is surgical, and after a section is removed, whether it is turgescent, hypertrophy of bone or soft tissue, a structure is left which has practically no connective tissue to interfere with its normal function.

DISCUSSION.

Dr. J. C. Beck thought Dr. Cavanaugh had not covered the subject from the pathological standpoint sufficiently. He presented forty-two histological specimens of inferior turbinates, which represented ten different pathological types. There are not three, as Dr. Cavanaugh stated, but ten, and they play an important part in the therapeutics, particularly as to the result of operation. First, there is the *turgescent* type, in which the vessels are dilated, the venous channels are distended and not much reactive inflammation—just that inflammation which would result from congestion. Second, the latter effect of that condition, namely, *inflammatory*, from the result of the irritation of this large turbinate body, and in this we find not only the inflammatory condition in the wound cells, but, thirdly increase in the *epithelium*, so that we have a change in the epithelial structure almost like a bornification, a folding in of the masses of epithelium. Then, fourthly, you will find a changed condition in the inferior turbinated body in the bone proper; that is, the *bone is hypertrophied*—an actual osteitis. Fifth, there are conditions secondary to systemic conditions, which Kyle of Philadelphia has especially called attention to, the *cyanotic inferior turbinates*, secondary to cardiac disease, in which we find a chronic edema in the inferior turbinated body. That is a true pathological condition in the turbinate, but secondary, the same as anasarca in any other part of the body. Sixth, is the so-called "*mulberry enlargement*," which Dr. Cavanaugh left out entirely in his paper. These changes we are all accustomed to find in the large posterior ends of the turbinate, which hang into the post-nasal space, so to speak, or against the Eustachian tube.

The seventh form of pathological change is *atrophy*, which is of various forms; for instance, as found in genuine ozena, in which the epithelium is in a metaplastic form, with shrinkage of all the other components of the turbinate, or sec-

ondary shrinkage and substitution by scar tissue, as following or associated with chronic suppurative sinus disease or following or associated with luetic ozena. The eighth form is the *primary tuberculosis* of the inferior turbinate, which is characterized by chronic inflammatory changes and the pathognomonic findings of the giant cells, etc. Dr. Beck reported a case like it in *The Laryngoscope* several years ago. It is also found in Ballenger's textbook.

The ninth variety of pathological change is the *sarcoma* or *carcinoma*, which is very well recognized from the characteristic histological findings.

Finally, the tenth type is the *miscellaneous*, such as other forms of neoplasms and inflammation, as, for instance, angioma, fibroma, myxoma, chondroma and actinomycosis, rhinoscleroma, etc. All these have their characteristic histological change. Dr. Beck has specimens of most of these conditions and would be glad to demonstrate the sections.

Regarding cautery, those turbinates which he found had a great deal of epithelium gave practically no result; in fact, they were made worse by cauterization. There was increase in the epithelial growth and increase in the swelling of the turbinate following linear cauterization. Whereas in those cases in which the punctures were made the results were very good. In bony hypertrophy only the removal of some of the bone will give good results.

It is the speaker's belief that the operation described by Dr. Cavanaugh and as recommended by Yankauer and Freer is a case of "much ado about nothing," and not worth the trouble. He has been practicing the following: If the lower edge of the inferior turbinate and posterior end are large, they are removed by snare and the lower edge of the mucous membrane is turned up, part of the bone removed, so that the mucous membrane will cover the bone when brought down again. Where the enlargement is not so great he has been satisfied with a process he calls the crushing of the lower edge of the turbinate, not producing necrosis, but a necrobiosis. The instrument used will be described in the next number of the *Annals of Otology, Rhinology and Laryngology*. This procedure has been absolutely satisfactory in his hands. It is a slow death, so to speak, of that tissue which is not functioning. In conclusion, the speaker thought the society was indebted to Dr. Cavanaugh for his timely paper.

Dr. Robert Sonnenschein referred to a method that Dr. Pierce used, in which he simply made a small incision at the anterior end of the inferior turbinate and then introduced a probe along the bone, thereby setting up an inflammatory reaction in the latter, which is the object of the electrolysis, but in this case there is no destruction of tissue, less reaction, and almost as good results as those claimed by those who practice submucous electrolysis.

Second, with regard to carbon dioxide snow it is very easily applied, except that it is necessary to have an experienced operator. He had seen Dr. Gradle operate on one or two cases, and had examined the patients two months later, and they showed good results, but he could not say anything as to its permanent effect.

Dr. H. W. Loeb, of St. Louis, would like to ask if the measurements were taken by Dr. Cavanaugh in fresh heads or preserved heads, and if taken simply with calipers or reconstructed. The error will be tremendous unless they are reconstructed, and unless one admits that the distances in the living are not at all like those found after death. Since the development of the submucous resection, the speaker's opinion, from his own practice, is that the inferior turbinate comes very little into play by way of treatment, whereas formerly much unnecessary operative procedure had been employed. He is inclined to agree with Dr. Beck that when one has a posterior turbinal hypertrophy, or hypertrophic condition, or cystic condition, in the posterior portion of the turbinate, there is no use doing anything except to remove it. He simply cuts it off and pays no more attention to it. He does not adopt the refined method of Yankauer or Freer, or the somewhat angiotribe-like method of Dr. Beck.

Dr. Charles M. Robertson has been practicing rhinology long enough to have been through all of the fads, and he has bored holes under the turbinate and through the turbinate and punctured the turbinate with galvano-cautery and with chromic

acid, and so forth, as all the rest of the older men have. And as he gets a little bit older he gets a little bit more conservative about the use of the knife. He has found that very many of these cases of so-called turgescence are general conditions. He thinks we ought to keep that in mind, and not deal with these conditions surgically until we have treated the case as a physician should.

As regards the surgical treatment of the turbinate, he is agreed with Dr. Beck. When there is a hypertrophy of the bone, when there is too large a dilatation of the venous sinus, he takes off the lower edge of the inferior turbinate and sacrifices the posterior end.

The speaker has seen scabbing in the clinic once in a great while after an operation on the turbinates, but it was always after somebody had operated who had haggled the tissue on the edge of the turbinate and not cut it smooth. If we cut off the lower edge of the turbinate, which is devoid of venous sinus and glands, the part becomes depleted and the mucous membrane falls down and forms a *V*, the little pieces of mucous membrane coalesce, so that after twenty-four or forty-eight hours the mucous membranes are in apposition, and you do not have to take out any stitches or wait for them to heal. In case of the patient being a bleeder, it might be necessary to adjust the edges of the little flaps and coapt them. This can be done, if you wish, by a galvano-cautery, or it can be done by black silk sutures, or by putting a little pack in.

Dr. Cavanaugh, in closing the discussion, said he expected what he got, and a whole lot more, but appreciated what all the members said, and was sorry that there was not more discussion. The pathological side was briefly mentioned because he was not prepared to present the subject from a histological standpoint.

In reference to Dr. Sonnenschein's remarks about the use of the probe along the periosteum, Dr. Cavanaugh has not had any experience, but did not think it would do the work in most of these cases. If there is a true hypertrophy, there would not be much contraction; and in turgescence cases, the vessels being dilated, he could not see how the operation spoken of would take care of it. Still it might.

Answering Dr. Loeb's question about measurements, those of the bony turbinates were taken in the cadavers, while the measurements with the mucous membrane were taken in the living subjects, some after shrinkage, and some before, but all the measurements mentioned in the paper were taken without shrinking.

Dr. Robertson's remarks might be timely to the younger men, but the speaker may lay claim to a few gray hairs. He has not had Dr. Robertson's experience, yet believes one could not say whether or not these turbinates were functioning by their microscopical appearance. Dr. Robertson can tell whether these turbinates are normal only by microscopical specimens as they show the actual changes in the turbinates, and Dr. Cavanaugh thinks that is what has to be done in all these specimens to get a foundation. It is very easy to look into a nose and see what we might call a nice turbinate, but when it comes to the true functioning part of that turbinate, the speaker believes a specimen should always be removed and microscopical sections made, in order to prove the point.

LOCAL VERSUS GENERAL ANESTHESIA IN NOSE AND THROAT OPERATIONS.

Dr. Joseph C. Beck first considered local anesthesia, referring especially to the work of Kohler with cocaine. Owing to the possibilities of cocaine poisoning, there was a demand for substitutes, of which tropococaine, alypin, eucaïne, beta-eucaïne, novocaine, stovain, quinine and urea hydrochlorate are some of the most important that have been recommended. In addition, it was found that local applications of solutions of adrenal gland extracts aided the anesthetic effect, as well as prevented rapid absorption of the poison. Up to the time novocaine was brought

forth as a local anesthetic it had been the speaker's experience that none of the above mentioned substitutes did the work as well as cocaine, and even now he finds that in some cases he has to resort to it in order to get anesthetic effects. He only remembers one distinct case of cocaine poisoning in a boy nine years old, followed by perfect recovery.

The speaker's experience with spinal anesthesia by means of stovain, as advocated by Jonnesco, had not been satisfactory.

Under general anesthesia he considered ether, chloroform, nitrous oxide, alcohol, chloroform and ether (A. C. E. mixture), bromide of ethyl, chloride of ethyl, somnoform, morphin, scopolamine and hyoscine. From 1895 to 1901 it was his custom to employ chloroform as the general anesthetic in preference to ether, and he could say unhesitatingly that the results were much more satisfactory as he never had a death from its use, and did have one death from ether. Nevertheless, following the general cry against chloroform, he gave up its use, only employing it in rare instances. He uses it almost exclusively in infants, especially in cleft palate operations. The anesthetic that he employs is ether, and he gave the method of its use in nasal, mouth and throat operations.

Dr. Beck wished to call attention to one of the most important questions, as to the choice of a local or general anesthetic. He referred to the work of Crile on the effect of mental shock or fear on the repair of the tissues after operation, and on the deleterious effect of this mental shock and fear on the nervous system. He is sure that every operator has observed what is termed post-operative neurosis, which is analogous to the post-traumatic or post-partum neurosis. He did not wish to say that one never sees the post-operative neurosis in general anesthetic cases, but certainly they are not nearly so frequent. He believes that if one would follow the teaching of Crile in applying the method of anoci-association, by blocking off locally the nerves by injecting novocaine solution, one would see fewer of these cases following the use of general anesthesia.

Another important point in the choice of a local or general anesthetic is the question of pain that is experienced even in a thorough local anesthetic. Pain is a relative phenomena, and different individuals are more or less susceptible to it. A still more important factor is the ability to do thorough removal of the pathologic processes and the proper stopping of bleeding and application of dressing, which often is not possible in a very nervous patient. A fourth reason for the use of general anesthesia in preference to local is the strain on the operator when working under local anesthesia. The one great advantage in the local anesthetic is the saving of time both for operator and patient, but Dr. Beck doubts very much whether this factor can be taken into consideration after having stated the advantages of the general anesthetic. (Dr. Beck demonstrated the apparatus which he uses for general anesthesia.)

DISCUSSION.

Dr. George E. Shambaugh believes that the question of an anesthesia, both local and general, is a much more important feature of operation than it is usually given credit for; especially is this true for those doing nose and throat work. First, as regards general anesthesia: Dr. Shambaugh advocates strongly the employment of a trained anesthetist, especially for the removal of tonsils and adenoids, or other operations about the nose and throat.

At the Presbyterian Hospital they find it unnecessary to resort to any special method of giving the anesthesia. The simple drop method is employed until the child is thoroughly under. The patient is then turned over on the side, the operator sitting down in a chair. No especial provision is necessary here for continuing the anesthesia, or for taking care of the bleeding, since the blood runs naturally out of the mouth and is not inhaled. If the reflexes return before the operation is completed, the cone is again replaced over the face and ether is given for a short period. As a rule, no additional anesthesia is required for a tonsil operation.

All special apparatus for administering anesthesia or for pumping blood out of the throat is adding so many more things to get out of order and to complicate the operation. The operator who has had experience gets along with very few instruments and the same is true of a trained anesthetist. In some places the expert anesthetist seems to have had a mania for devising elaborate and unnecessary instruments for doing something which is very simply and just as efficiently done without them.

The danger of inhaling blood during the tonsil operation is when the patient is on the back. It is not without risk. The speaker knows of two cases occurring in Chicago last year where lung abscess developed from this cause. This danger can be entirely obviated by placing the patient on the side, as already described.

As regards local anesthesia for tonsil work, Dr. Shambaugh finds that he succeeds much better now than he did a few years ago. A great deal depends upon the technic. He never uses stronger than five per cent cocaine rubbed on the surface, and injects five-tenths per cent novocaine. Injections are made at three points only for each tonsil: The posterior pillar, at the lower pole of the tonsil, and into the capsule; the latter is accomplished by pushing the needle through the soft palate. He finds it exceptional for a patient to experience pain during this operation. He does have cases, however, where it is impossible to get complete local anesthesia. This is always the case where there have been dense cicatricial formations complicating the peritonsillar abscess, but it may also occur in the simpler cases. He has found that wherever the application of five per cent cocaine and adrenalin results in a local anemia that a satisfactory anesthesia is assured, and it is only in cases where the application of this solution seems to bring on a local congestion that he has experienced any trouble in getting a proper effect.

For the operations in the nose he has discarded entirely the stronger cocaine solution and uses the five per cent made up in adrenalin. He has found that he gets just as complete anesthesia with five per cent as with a twenty per cent.

Dr. D. T. Vail, of Cincinnati, by invitation, said that he had nothing but words of admiration for Dr. Beck's paper. He was, however, in harmony with Dr. Shambaugh in his remarks pertaining to professional anesthetists bringing complicated anesthetic apparatuses to the operating-room, taking up valuable space and detracting from the operation by constantly calling the attention of the operator and others present to the splendid demonstration as to his ability to give mixed anesthesia and have the patient come through alive. He recalled two deaths from anesthesia in his own experience. In each case there was a tumor involving the antrum of Highmore, which extended into the sphenoid cavity. As it was very important to have the patients properly anesthetized, he employed expert anesthetists in each case, who brought to the operating-room a complicated apparatus which required as much skill in manipulating as a pipe-organ. In one case the patient died three days after the operation, never having come out of the condition of shock, rapid, thready pulse, cyanotic expression, etc.; in fact, the heart whipped itself

out. In the other case, the patient, a little boy of twelve, was deluged with a mixture of all kinds of anesthetic gases from an elaborate apparatus, and he died on the table. Since these experiences the speaker is satisfied to use the Esmarch mask and have the ether poured on drop by drop, watching the patient go through the various stages of anesthesia to complete narcosis.

Dr. J. R. Fletcher uses both general and local anesthetics. The drop method and various devices are unsatisfactory. While we should not work against time, as formerly, both tonsils can be removed and bleeding points tied in a few minutes under continuous deep anesthesia. He has seen five deaths from anesthetics, for but one of which he must answer. This patient died after cocaine-adrenalin injection, as he always does it, using about one-fifth grain to the patient. The question remains, What caused his death? The speaker has continued to use the same solution, namely: Cocaine, one grain; adrenalin, twenty minims; normal salt solution, eighty minims, for years, even in small children, without bad effect. When the above injection is made in blisters around the tonsil, either with or without general anesthesia, no suction is necessary, as the amount of hemorrhage is very small.

Dr. Ira Frank said that to those doing the Killian suspension this method is far superior to any he has tried. He has not the elaborate apparatus exhibited, but still a very satisfactory one, with the foot pump. There is only one precaution he would like to mention, namely, not to pump too fast, because the patients get a direct inhalation of the ether. A few days before he had been able to do a complete suspension, demonstrate the larynx to those present, and take out both tonsils and adenoids, and the child was still asleep.

Dr. H. Kahn wished to refer to the post-operative acidosis and acetoneuria which follow carbohydrate starvation and are due to changes in the liver. He has found that the use of four per cent glucose injected into the rectum either before or following operation is more effective than the use of sodium bicarbonate. If in those cases that seem likely to have an acidosis—illegally nourished children and people who are afraid—you will feed them candy or sugar some time before operation, you will have better results. The speaker believes the acidosis is due to starvation, and, therefore, changes in the liver, so if you feed them candy and fill up the liver with sugar you will have less acidosis, and the sugar is an effective agent rather than the sodium bicarbonate.

Dr. H. W. Loeb, of St. Louis, noted Dr. Beck's casual mention of his growing tendency to use a general anesthetic for submucous resections, referring to the fact that some men were able to do these under local without pain by virtue of their hypnotic powers. Dr. Beck's contention, of course, is that these patients have some neurotic result. The speaker thought that the neurotic results from using a local anesthetic came primarily from other neurotic conditions. He cannot see why anybody wishes to use a general anesthetic for a submucous resection. The speaker's patients complain of only one thing, namely, the removal of the packing after operation.

Another thing, namely, Dr. Beck's plan of following out the anoci-association of Dr. Crile. He should carry out the other suggestions of Dr. Crile, to the end that the patients never know when they take the anesthetic. Of course, this refers more particularly to goiter operations. If we are to get the full value of anoci-association we should not only block off everything, but also the impressions which the administration of the anesthetic causes.

Dr. Robert Sonnenschein wishes to suggest one thing in reference to the patient referred to by Dr. Fletcher, who died under local anesthesia for tonsillectomy, and that is, if he heard aright, that twenty minims of adrenalin were used. Freudenthal of New York showed in an article a few years ago that adrenalin when used in quantities more than about 10 minims of a 1/1000 solution has caused death in a number of cases where it alone was used; therefore, eliminating the fact of the cocaine. He showed conclusively that a great many of these cases of sudden death during local anesthesia were typical adrenalin deaths, with very marked pallor, small, thready pulse and death in a few moments. He warned strongly against the submucous injection.

tion of large quantities of adrenalin. It seemed to the speaker that in using Schleich method it is not necessary to use the adrenalin, because the mere injection of salt solution will give a very marked anesthesia when adrenalin is omitted.

As to the removal of the packs, if the famous Beck paste is applied on splints, such as the cotton nasal splints, on both sides at the time they are inserted, it is usually very easy to remove them on the following day.

Dr. J. R. Fletcher said, in answer to Dr. Sonnenschein, that the whole formula called for 20 minims; only 15 minims of that were used, namely, a dose of 20/100.

Dr. R. H. Good said he had had two very interesting cases lately of which he would like to speak. The first was a young boy of fourteen in whom he did an operation on the middle turbinate. There was some hemorrhage, which, however, stopped in a minute or two. Then he proceeded to remove the tonsils, first injecting novocaine around the tonsils. In a minute or two after injection the boy began to complain of terrific headache and the nose began to bleed profusely, which the speaker thought would stop in a minute, but after five minutes he was obliged to pack in order to control it. He complained of such severe frontal headache that he had to lie down, and it was impossible for the speaker to proceed with the operation for seven minutes. That was the first case of that kind he had had up to that time, but a week ago he had an adult in whom he injected novocaine—a two per cent. solution—and the same terrific headache appeared. He is satisfied that the novocaine caused this headache.

It has always been said that we should wait for fifteen to twenty minutes for anesthesia after injecting novocaine. The speaker does not find this the case. Immediately after injecting he begins to operate and thinks the anesthesia is better.

He has been using the Brophy anesthesia outfit for at least twelve or thirteen years and has had no trouble in keeping the patients asleep, providing the apparatus is used properly and kept in good repair.

Another important point about this method of anesthesia, namely, the tube that goes into the ether, should have fifty or one hundred holes in the bottom of a ball-like, enlarged end, which is immersed in the ether, so that the air comes out of fifty or one hundred holes in small bubbles through the ether. In this way you can keep any patient asleep without a warm bath or motor. The speaker does not like the noise of a motor. Furthermore, you have a new interne every week or month and with a warm bath and a motor the ether is escaping all the time and you can easily put a patient to sleep too deeply with this method. The simpler the method used the better.

You could not hire the speaker to use cocaine for sub-mucous injections in tonsillectomies. He has had considerable experience with it and would not use cocaine subcutaneously for tonsils so long as we have novocaine to substitute for it.

Regarding general anesthesia in adults for tonsillectomies he gives it occasionally, when he has to, but keeps away from it whenever he can.

Dr. A. A. Hayden thought what Dr. Shambaugh said about the ischemia taking place, especially in tonsil cases, as being an index as to complete anesthesia, is very important. When the low percentage of adrenalin is used and the parts become pale, the anesthesia is always complete. When they do not become pale it is not complete, in the speaker's opinion.

Regarding the apparatus presented by Dr. Beck the speaker wished to recommend it strongly. A few years ago he was prejudiced against all apparatus of this sort by seeing a very noted surgeon use an apparatus of his own, and it took him an hour or two to get out the tonsils. And so he was prejudiced against such methods until Dr. Bergeron introduced an apparatus of the kind shown by Dr. Beck into St. Joseph's Hospital. He persuaded the speaker to use it and he found that it was not a contrivance that would make the operation longer, but, on the other hand, very much shorter, if properly used. So, the apparatus exhibited is very satisfactory, in his opinion.

Another interesting point is that the operator can pretty well tell the coagulation time of the patient's blood by what is in the bottle. It clotted at the end of the operation (saying the operation took five minutes), it is a very fair estimate that the coagulation time of the patient's blood is normal. If not, it is a fair estimate that the coagulation time of the patient is not normal and that we should look more carefully to every hemorrhage.

Dr. George W. Boot said that for the last six years they have used a much simpler method than that of Dr. Beck in the Children's Memorial Hospital. In this method they use the old-fashioned paper cone, covered with a thin towel. There is a nurse who gives the anesthetics and takes x-ray pictures. Using this apparatus, she will habitually put the children to sleep with two ounces of ether for tonsillectomy and the operation is done in this way in from ten to fifteen minutes. The ether is given until the patient is far enough asleep to take out one tonsil. The inhaler is then put back while the snare is rearranged. By the time the wire is ready for the next tonsil the patient is far enough asleep for the second enucleation. That is done and the adenoids taken out without any further anesthesia. The ether does not have time to get fixed in the tissues. They have never had a death from the anesthesia since using this method.

With regard to the use of chloroform he thinks there is only one class of cases in which its regular use is justified and that is in alcoholics.

He would like to speak of another point, namely, doing mastoid operations under local anesthesia. He has done four such operations under local anesthesia. Two of these were in children sick with scarlet fever. One was in a man who was far advanced in tuberculosis and had chronic Bright's disease. The fourth was in a man who did not want to take ether. In all four the operation was done very well under local anesthesia, using novocaine.

Dr. Beck, in closing, said that he knew very few would agree with him and he sincerely hopes that by the time the subject was presented again by someone else a good many would have changed their minds, because he honestly believes that if it were left to the patient whether he wanted local or general anesthesia (if he had been operated on before under ether) he would prefer general anesthesia.

In regard to the drop method of anesthesia Dr. Fletcher answered that point—the patient is not asleep long enough. You cannot do good work unless you are a rapid operator when you use the drop method of anesthesia.

Regarding deaths from anesthesia the speaker recalled four, all when ether was employed. One of these occurred in Dr. Gradle's practice. The speaker operated on a brain abscess and the patient died on the table. He was very low before and during the operation and there is a question whether he died from the anesthesia or from the brain abscess. The second case was one he had reported to this society four years ago, which occurred in a colored man who was operated on for meningitis. In this case it was discovered post-mortem that the man had only one kidney, which was cystic, and the other was an infantile kidney. He had a uremia and so the anesthetic perhaps helped him along a little sooner.

In the third case the patient was operated on for tonsils and adenoids and the child died on the table while the assistants were operating. Dr. Le Count made a post-mortem examination and an enormous thymus was found, a status thymicus. In trying to find the vessel for injecting adrenalin as a restorative measure they could not find a large enough artery or vein to do so. The fourth case was out of town and in this case he felt sure an overdose was responsible, namely, no attention was paid to the amount given and the patient was simply drowned in the ether.

Dr. Fletcher had called attention to a death from a local anesthetic and the speaker said he was looking at Dr. Loeb to remind him that deaths had been reported before from local anesthesia. How about the cases that he (Loeb) operates on under general anesthesia? Perhaps he meant to say he would not use general anesthesia unless he had to. That is only discussing a little point in a big question. Dr. Beck would say that the general anesthetic must be made as safe

as possible and a good anesthetist employed, upon whom you can rely, and then you need not fear death from ether anesthesia. So, after all, it is not the question of finding objections to the general anesthetic, but the manner in which the anesthetic is administered.

Dr. Kahn spoke of glucose instead of bicarbonate of soda. Dr. Beck only knows that since using the bicarbonate of soda, whether scientifically proven or not, it has seemed of value. He could only take Dr. Lynch's word for it, from his experience. Dr. Lynch lost his own child from acetone following an operation and went into the subject carefully, having made experiments, and he thinks that bicarbonate of soda is of value to prevent the acetone. It is used in diabetic cases where general anesthesia is employed. The glucose may be better. The speaker would like to think it over.

In answer to those who spoke of the apparatus exhibited as elaborate he would state that a great deal of comfort is attained by operating with the patient asleep, with no blood in the throat and mouth, not covered with a mask, which is worth all the elaborateness of the apparatus.

In regard to the removal of packing being painful he would quote Dr. E. Fletcher Ingals in giving an anesthetic to remove nasal packing. He has reported that to this society some two years ago. The speaker, however, has never done this.

Regarding anoci-association the speaker uses it, but not with perfume. There is no speaking allowed in the room while the patient is being anesthetized.

Regarding the motor in the apparatus exhibited and the noise it makes Dr. Good's objection to it is perfectly correct. The speaker thought also that the foot bellows would be better, but the foot pump is constantly getting out of order and so he had done away with it. He thinks the method of giving the anesthetic with this apparatus is simpler and easier than with a foot pump and so he uses the motor attachment.

Dr. Sonnenschein spoke of death from the use of adrenalin. The speaker two years ago reported on the use of adrenalin in otosclerosis. He has used it since then, as high as fifteen minims every other day, and has seen nothing but the symptoms that result from adrenalin. Those of the members who knew Hansen's experiments on adrenalin would know that fifteen minims are not toxic. He did not think that death in Dr. Fletcher's case was due to the adrenalin.

Futterhoff of Philadelphia has reported on death from sudden shock due to distention at the muco-cutaneous junction in connection with the submucous operation. Dr. Stubbs reported on this very fact at one of the meetings of the society several years ago.

Regarding the point brought up by Dr. Hayden as to blood clotting the coagulation time is determined as nearly as possible before operation.

Regarding chloroform the speaker had said in his paper that he would use it in infants. There is quite a call for it in such cases, but not in older children or adults.

In conclusion he would like to recall the statistics given by Rovsing three years ago to the American Medical Association, in which he stated that 50,000 ether anesthetics were collected without a death, 27,000 chloroform, nitrous oxide and other forms of anesthesia with sixteen deaths.

VALUE OF FULL TIRE INFLATION.

Many tire experts agree that more than half of the number of tire troubles are due directly or indirectly to underinflation. As it is, in the case of the pneumatic tire, not the rubber but the air carries, suspends and cushions the weight of the vehicle, everything, of course, depends on having as much air as possible in the tire tube,

without approaching the breaking point of the rubber at the weakest place of the tube. Every molecule of air which can be safely held in place in the tube helps to do the work for which the tire is employed. Incidentally, it keeps tube and casing in the most desirable form for which they are designed, and holding them rigidly, offers stones, nails and other road sundries such resistance as is needed to make the impact harmless.—*The Automobile.*

CRAWFORD COUNTY

Crawford County Medical Society met in regular monthly meeting in the Carnegie library, Robinson, July 8, 1915.

The meeting was called to order by the president. C. E. Price was appointed secretary pro-tem.

The members and five visitors were present.

Paper: W. W. Arnold, "Medical Jurisprudence from the standpoint of the Attorney."

Paper: Dr. E. B. Cooley, "Medical Jurisprudence from the standpoint of the Physician."

These papers were well received and freely discussed by the attorneys and the physicians present.

Mr. Arnold and Dr. Cooley were given a vote of thanks for their papers.

The following officers were elected: president, Dr. A. G. Brooks; vice-president, Dr. J. B. Cato; secretary, Dr. C. E. Price; censors, Drs. Voorheis, Henry, and Rafferty; delegate, Dr. Lowe and Dr. Henry, alternate delegate.

The secretary-treasurer's report was read, and upon motion was received by the society.

It seemed to be demonstrated that the meetings are better attended and more interest taken since the adoption of the monthly instead of the bi-monthly meeting. The papers are better prepared, and fewer falling short since the printing of the full year's programme at the beginning of the year. We have invited members of adjoining counties to participate in our programs.

At this meeting we had a member of our own legal profession with us, and Dr. E. B. Cooley, our counselor; and it was a very enjoyable as well as an instructive meeting. C. E. PRICE, Secretary.

Regular meeting, August 12, 1915.

The Crawford County Medical Society met in regular monthly meeting at Heathsville, August 12, 1915, with the president, Dr. Brooks in the chair.

Ten members were present. Both Dr. Jones and Dr. Mohler "who made up the program" being absent, the president called upon each member and assigned him a subject to address the society and a good meeting was the result.

The subject of "Enterocolitis" was discussed by Drs. Taylor and T. N. Rafferty. "Malaria" was discussed by Drs. Illyes, Taylor, Voorhies, Ikemire, and Cato. Several cases were reported along the Wa-

bash at Heathsville; plenty of mosquitoes, reported at Hutsonville and Palestine, but no malaria. The mode of mosquito infection and procreation was discussed by others. Dr. Illyes reported a case of suspected smallpox.

Dr. H. N. Rafferty as delegate to the state meeting gave a very pleasing report of the state meeting.

This meeting was held at the beautiful country home of Dr. Illyes, where the ladies spent a very pleasant afternoon with Mrs. Illyes; and at 5 o'clock everybody was invited to the dining room, where the tables were groaning under their loads of broiled chicken and every thing that goes with them in the way of vegetables and fruits.

Everybody left feeling they had been well paid for attending this meeting, and feeling sorry for those who could not attend.

The next meeting will be held at Flat Rock, September 9, 1915.

MACOUPIN COUNTY

Macoupin County Medical Society met in regular session in the Opera House at Palmyra, Illinois, July 25, 1915, and was called to order by President E. R. Motley, of Virden. After reading the minutes of the previous meeting and treasurer's report President Motley gave a brief address after which he introduced the new president, Dr. M. McMahon, of Palmyra, who gave his inaugural address. Dr. McMahon filled his speech with the ideas of enthusiasm and progress which are to be the watchword of the Society for the coming year.

The proposed amendment to the Constitution, "a, The regular meeting held in April shall be known as the Annual Meeting and at this meeting shall be held the election of the following officers: president, vice-president, secretary-treasurer, delegate, and alternate delegate. b, The Committee of Censors shall be appointed by the president immediately after his installation," was unanimously passed at this meeting.

Dr. James R. Higgins, of Gillespie, was unanimously elected to membership.

Gillespie was selected as the next meeting place for the Society. The Society then adjourned for luncheon.

At one-thirty the Society was again called to order and Dr. George Richter, of St. Louis was introduced who gave an able paper on "Blood Pressure" which was of practical interest.

Dr. Bertha Van Hoosen, of Chicago gave an able, interesting address on "Scopolamin-Morphin Anesthesia." Dr. Van Hoosen's address was especially directed toward obstetrical anesthesia, being an enthusiastic advocate of its use in that line of surgery.

Dr. George N. Kreider, of Springfield, gave an able address on "The New Era in the Practice of Medicine and Surgery." His talk was along the lines of later methods of diagnosis and treatment and was very comprehensive and interesting considering the time allotted to him.

Dr. E. W. Crum of Palmyra gave a very compre-

hensive paper on "The Opsonic Index." The paper was an interesting one and showed that the doctor had made considerable research in his efforts to make the paper the success that it was.

The Society on motion unanimously thanked Dr. George Richter for his able address on Blood Pressure, Dr. Bertha Van Hoosen for her able, interesting address on Scopolamin-Morphin Anesthesia, Dr. George N. Kreider for his efficient, exhaustive address on the New Era in the Practice of Medicine and Surgery, Dr. E. W. Crum for his comprehensive paper on The Opsonic Index, the physicians of Palmyra for their royal welcome and all others who have helped to make this meeting a success.

The following officers were installed for the coming year: president, M. McMahon, Palmyra; vice-president, F. A. Rener, Benld; secretary-treasurer, T. D. Doan, Scottville; censors, J. P. Denby, Carlinville, J. N. English, Gillespie, W. B. Dalton, Scottville; program, M. McMahon, T. D. Doan, W. A. Knoop, Chesterfield, J. S. Collins, Carlinville; medical-legal advisor, J. S. Collins; Red Cross, M. McMahon, T. D. Doan, T. W. Morgan, Virden, C. D. King, Gillespie, J. P. Matthews, Carlinville; delegate, T. D. Doan; alternate delegate, E. E. Bullard, Girard.

This meeting was one of the best from every standpoint in the history of the Society. The attendance was large, the enthusiasm great, and the addresses given were among the ablest and most interesting ever presented before the Society.

Attendance, thirty-four. T. D. DOAN, Secretary.

MADISON COUNTY

The Madison County Medical Society met at the Harrison Tuberculosis Colony, in Collinsville, August 6, 1915, with president Dr. Lay G. Burroughs in the chair. Twenty-one members and twenty-five visitors present.

A special board of censors consisting of Drs. Cook, Hastings and W. H. C. Smith reported favorably upon the application of Dr. F. B. VanWormer, of Alton, whereupon he was unanimously elected to membership. The following resolution offered by Dr. E. A. Cook, was adopted without dissenting vote.

Resolved: That when a tubercular patient is reported to this society for relief, the chair shall appoint a committee of three members living in the same locality as that of the patient reported, to investigate and act for the society and report at the next meeting. And be it further,

Resolved: That all rules opposed to this resolution be hereby rescinded.

Dr. M. W. Harrison, of Collinsville presented three cases to emphasize his contention that the blue line on the gum is not diagnostic of lead poisoning. One case had a decided blue line but had never been sick with any disease. Two other cases that had been paralyzed for months by lead never had the blue line. Dr. J. W. Fulenwider, a dentist from Collinsville, presented a well written paper on "Mouth Hygiene and its Relation to Systemic Disease."

Dr. O. LeGrand Suggett, of St. Louis, read a paper

on "Urinary Obstruction and its Consequences." This paper together with a specimen illustrating the subject, commanded marked attention, and has also been sent to the Illinois Medical Journal for publication.

Dr. C. C. Morris, of St. Louis, gave us a lecture on "The Technique and Principles of General Surgery." He emphasized asepsis but said that more was done in that direction than necessary. He prepares his patients for operation by ordering a tub bath and shaving, the night before. Nothing more until patient goes on the table when the field of operation is washed with alcohol and painted with tincture of iodine.

A vote of thanks was given to all of our speakers and also to Dr. and Mrs. Harrison for elegant refreshments served at the conclusion of the program.

Adjourned to meet in Marine on the first Friday in September.

E. W. FIEGENBAUM, Secretary.

ROCK ISLAND COUNTY

The Rock Island County Medical Society met August 10, 1915, at the Manufacturer's Hotel, Moline. After a dinner at which twenty-two participated, the regular business session was held with Vice-president G. A. Wiggins in the chair.

Minutes of the two previous meetings were read and approved. The following applicants were elected to membership; Andrew Grassau, Hillsdale; G. L. Langworthy, Moline; Peter S. Winner, Watertown.

The names of Drs. E. A. Anderson, F. C. Welch, Alfred Stocker and J. D. McKelvey were proposed for membership.

The death of Dr. E. L. Kerns was announced and a committee of three were appointed to draft suitable resolutions.

The following ammendment to the By-laws was read; "An applicant may be entitled to membership, provided he has practiced within the jurisdiction of this society for one year or more. A year's residence will not be necessary to physicians accompanying their application with a transfer card from another Component County Society."

"Some Uses and Limitations of Vaccines," F. L. Lamb, Pathologist Mercy Hospital, Davenport.

"Conservatism in the Treatment of Injuries to Hands and Feet." J. R. Hollowbush, Rock Island.

Informed reports from the meeting of American Medical Association, L. W. Littig, F. J. Otis, E. M. Tala. Both papers proved highly instructive and practical and were freely discussed by members of the society.

The reports from the physicians who attended the San Francisco meeting added interest to the program. Thirty members and three visitors were present.

A. E. WILLIAMS, Secretary.

Personals

Dr. Harry A. Pattison has succeeded Dr. Horace B. Dunn, Rockford, as physician of Winnebago County.

Dr. Arthur M. Corwin has been appointed director of publicity and education of the Chicago Department of Health.

Dr. Argal E. Hubbard, for two years medical director at the Ottawa Tent Colony, has resigned and will practice in Peoria.

Dr. William A. Nason, Algonquin, who has been confined to his home for several months, is reported to be convalescent.

Dr. Joseph P. Smyth was elected medical examiner of the Catholic Order of Foresters at its meeting in Providence, August 3.

Dr. Egbert K. Dimmitt, Farmington, has returned convalescent from the Hospital in Peoria where he was under treatment for five weeks and will spend the balance of the summer at Green Mount Falls, Colo.

Dr. Frank W. Lynch, assistant professor of obstetrics in Rush Medical College, has been made professor of gynecology and obstetrics and head of the department in the University of California, and will leave to take up his new duties September 1.

Drs. Charles J. Whalen, William Noble, Clarence W. Leigh, Nathaniel A. Graves and Michael J. Purcell have been appointed a board of review to examine veteran Chicago Policemen who have been recommended for retirement by the Chief Ambulance Surgeon.

Personals and news items of interest to members of the society are requested for this column.

Dr. J. D. Chittum and family, of Sorento, returned Aug. from a six weeks tour through Missouri, Kansas and Colorado in the doctor's automobile.

News Notes

Note this date!

What date is that?

Why, October 6-8, 1915.

And attend the meetings of the Tri-State Medical Society. Complete program in this issue.

—The Bulletin of the Montgomery County Medical Society for August contains an article by Dr. Charles H. Lockhart, of Witt, on "Pyloric Stenosis of Infancy."

Health News, the official monthly publication of the State Board of Health, containing matter of interest to all practicing physicians and of special importance

wherein it keeps one in touch with developments in public health circles through the state and county, can be had free for the asking. A request addressed to the secretary at Springfield will place your name on the mailing list.

—The administration of the Municipal Tuberculosis Sanitarium is to be concentrated at the institution. Headquarters in the city will be maintained only for the medical director and head nurse. The trustees believe that an annual saving of about \$10,000 will be made by this change.

—The Madison County Doctor for August presents a portrait and brief biography of President Lillie. It also contains the usual quantity and variety of news items, showing that Editor Fiegenbaum does not relax his efforts during the period when so many think they need a vacation.

—The State Board of Health has published a series of pamphlets showing the officially adopted rules for the control of contagious diseases, as in force on and after February 16. These include "general rules for the control of communicable diseases," "scarlet fever," "whooping cough," "typhoid fever and typhoid carriers," "small-pox," "measles," "chicken-pox," and "diphtheria."

—The administration of the Oak Forest Tuberculosis Sanatorium has been formally approved by the advisory committee which consists of Drs. Theodore B. Sachs, Ethan A. Gray, Stephen R. Pietrowicz and Mr. James Minnick. At present the staff consists of eight physicians and fifty-six nurses and there are 586 patients in the institution.

—The twenty-nine cases of typhoid fever in Harvey are said to have been traced to an afflicted employee on the dairy farm of E. N. Wright, near Manteno, from which a large portion of the milk supply in Harvey is received. The employee is said to have gone to Oshkosh, Wis., and the health authorities in that city have been notified and have taken all necessary precautions to prevent the spread of the disease.

—Plans for an addition to the Peoria Municipal Isolation Hospital have been completed and work on the new building will be started early this fall. The new building will be separated entirely from the present hospital. It will be a

one-story brick structure and will contain ten rooms for use and care of patients and three wards for observation purposes, with the necessary laboratories and supply rooms. The city council has appropriated \$10,000 for the construction of the building.

The services of the Sanitary Engineering Bureau of the State Board of Health are now available to Illinois communities desiring advice and information on questions of water supplies, sewage disposal, garbage disposal, drainage, ventilation and general sanitation of school houses and public buildings and upon other matters which lend themselves to engineering treatment.

Mr. Paul Hansen is now in charge of this bureau and has as his engineering assistants, Mr. M. C. Sjoblom and Mr. H. F. Ferguson.

Requests for the services of the Engineering Bureau should be addressed to the Secretary, State Board of Health, Springfield.

—*Public Health Reports*, August 20, contains the report of Surgeon J. C. Perry on the Chicago Department of Health made at the request of the Civil Service Commission. It is practically an abstract of the more voluminous report issued by the Commission as the result of a four months' study made last winter. Many of the Department methods received deserved commendation, but suggestions along the lines of improving efficiency were freely given. The lack of sufficient funds for effective work in infant welfare was noted.

—"Under the eugenic marriage law the number of weddings in Wisconsin decreased from 21,052 in 1913 to 17,245 in 1914, a decrease of 3,807, according to announcement today by Dr. C. A. Harper, secretary of the State Board of Health and Vital Statistics."

Too bad, isn't it. Let us all weep, but also let us all analyze this statement. It means that 3807 men in Wisconsin found themselves unfit to assume the marriage relation; that they found themselves in such a physical condition that if the contemplated marriage had been consummated, they would very soon have placed their loving, trusting life-partners in such a deplorable condition that God Almighty himself would have pitied them. It means that 3807 brides have been saved from a life of disease and misery and of both mental and physical anguish, that would have been worse than hell itself. Now let us all weep again.—*The Madison County Doctor*.

—The Municipal School of Midwifery was founded August 7 and will have its headquarters in the Iroquois Memorial Hospital. A faculty of competent physicians will instruct the midwives. Dr. Henry F. Lewis, head of the obstetric department of the Cook County Hospital, will be dean of the school, and associated with him are Drs. Rudolph W. Holmes, William G. Lee, Carey Culbertson, Otto H. Rohrlack, Gilbert Fitzpatrick, Arthur H. Curtis, William H. Rubovits, Joseph L. Baer, Bertha Van Hoosen, Effa V. Davis and Mark T. Goldstine. Attendance at the school cannot be made compulsory, but with the power conferred on the health authorities by recent legislation, it is hoped to induce midwives to take the instruction. A correspondence school for midwives was undertaken several years ago by the Department of Health but it met with little response on the part of the midwives. It is to be hoped that the present more ambitious plan will meet with better success.

Marriages

JOHN F. FAIR, M. D., Freeport, Ill., to Mrs. Frances G. Footett of Mitchell, S. D., July 6.

FRANK EUGENE BALDWIN, M. D., Peoria, Ill., to Miss Margaret Lockwood of Chicago, July 28.

THOMAS REESE FOSTER, M. D., Watseka, Ill., to Miss Edna May Gray, at San Francisco, June 30.

ROBERT CARNAHAN KIRKWOOD, M. D., Chicago, to Miss Elna Rasmussen of Lakeview, Wash., at Seattle, June 29.

FRED HERMAN MULLER, M. D., to Miss Anna D. Fleer, both of Chicago, July 14.

LESLIE L. ROBERTSON, M. D., Livingston, Ill., to Miss Vera K. Frye of Cowden, June 26.

Deaths

AZRO PATTERSON WILLITS, (license, Illinois, 1881), aged 65; died at his home in Keithsburg, Ill., July 17.

EDWARD SUMNERS, M. D. Hahnemann Medical College, Chicago, 1904; aged 37; died at his home in Shirley, Ill., July 16, from cerebral hemorrhage.

HENRY D. SMITH, M. D., Eclectic Medical Institute, Cincinnati, Ohio, 1880; aged 61; for

thirty-five years a practitioner of Vandalia; died at his home August 7.

MARGARET E. HENNESSY, M. D., Hahnemann Medical College, Chicago, 1888; aged 58; of Utica, N. Y., died in LaSalle, Ill., April 23, from carcinoma of the uterus.

HENRY E. HALE, M. D., Hospital Medical College of Evansville, Ind., 1883 of McLeansboro, Ill.; a member of the Illinois State Medical Society; died July 6, after an operation for intestinal obstruction.

ROBERT ALLISON BROWN, M. D., Missouri Medical College, St. Louis, 1876; Bellevue Hospital Medical College, 1883; Medical College of Ohio, Cincinnati, 1884; aged 58; a member of the Illinois State Medical Society; died at his home in Humrick, Ill., July 21, from nephritis.

WILLIAM M. JOHNSON, M. D. American Medical College of Cincinnati, Ohio, 1857; a member of the Illinois State Medical Society; a practitioner of Johnsonville, Ill., and for years president Wayne County Medical Society, died at his home August 13, 1915, from carcinoma of the inferior maxilla, aged 86.

WILLIAM H. STENNETT, M. D. Homeopathic Medical College, St. Louis, 1869; aged 82; for forty-three years an official of the Chicago and Northwestern System where he had been successively general passenger agent, assistant to the general manager and auditor of expenditures; died at his home in Oak Park, Ill., July 22.

SAMUEL HENRY MELCHER, M. D., Dartmouth Medical School, Hanover, N. H., 1851; aged 86; for many years a resident of Chicago; surgeon with the rank of colonel during the Civil War; blind for twenty years; died at the home of his daughter in Chicago, August 1.

SIDNEY G. PRATT, M. D. St. Louis University, 1906; aged 36; of Kewanee, Ill.; died about July 9.

BENJAMIN GLEESON, M. D., Rush Medical College, 1902; aged 38; a Fellow of the American Medical Association and a member of the American Academy of Ophthalmology and Otolaryngology and Aesculapian Society of the Wabash Valley; oculist and aurist to St. Elizabeth's Hospital, Danville, Ill., oculist to the Chicago and Eastern Illinois Railway and the Illinois Traction System; at one time a pharmacist; died at his home in Danville, July 18.

CHARLES HERBERT BRADLEY, M. D., Northwestern University Medical School, Chicago, 1890; aged 50; a Fellow of the American Medical Association; a member of the Minnesota Pathological Society; from 1904 to 1910, secretary-treasurer and in 1911, president of the Hennepin County (Minn.) Medical Association; for six years assistant physician in the Kankakee (Ill.) State Hospital; for many years a member of the staff of the Minneapolis State Hospital; clinical instructor in medicine in the University of Minnesota in 1912 and 1913; died at his home in Minneapolis, August 1, from disease of the brain. The Hennepin County Medical Society and the visiting staff of the Minneapolis City Hospital, at special meetings adopted resolutions regarding the death of Dr. Bradley, and six members of the Hennepin County Medical Society acted as pallbearers at his funeral.

NEW AND NONOFFICIAL REMEDIES

The following articles, not previously described, have been accepted by the Council on Pharmacy and Chemistry of the American Medical Association for inclusion with New and Nonofficial Remedies:

Caustic Applicators, Special (Silver Nitrate, 50 per cent.)—Wooden sticks, 12 in. long, tipped with a mixture of silver nitrate 50 per cent and potassium nitrate 50 per cent. Antiseptic Supply Co., New York (Jour. A. M. A., July 3, 1915, p. 29).

Enzymol.—An extract of the fresh animal stomach containing the gastric enzyme in active standardized form and having an acidity due to combined hydrochloric acid. Enzymol is stated to be useful as an application to old sores, ulcers and slow healing wounds. It is said to correct offensive odors, to exert a solvent action on pus, sloughing and necrotic tissue and to impart a healing stimulus. For the solution of necrotic bone and in some abscesses hydrochloric acid is added to the diluted extract (Jour. A. M. A., July 24 1915, p. 333).

Book Notices

FRACTURES AND DISLOCATIONS, DIAGNOSIS AND TREATMENT. By Miller E. Preston, A. B., M. D., First Lieut. M. R. C., U. S. A.; Surgical Examiner, Colorado State Board of Medical Examiners; formerly Police Surgeon, City and County of Denver; Instructor in Anatomy University of Denver, and Visiting Gynecologist to City and County Hospital, Denver, Colo., with a chapter on Roentgenology by H. G. Stover, M. D., Professor of Roentgenology School of Medicine, University of Colorado; Member of American Roentgen Ray Society; Visiting Roentgenologist to City and County Hospital, St. Joseph's Hospital, and Children's Hospital, Denver,

Col. 860 Illustrations. St. Louis: C. D. Mosby Co., 1915. Price, \$6.50.

This new work on fractures and dislocations calls for immediate congratulations to author and publisher. It is one of the best works in the English language on fractures and dislocations. Great stress is laid on inspection, and numerous illustrations, mostly original, are inserted as an aid. A valuable feature is the introduction of illustrations from photographs made almost immediately after receiving of injury. The divisions of the book are rather unique, all the injuries to which a given region is subject (including fractures, dislocations, joint fractures, and fracture-dislocations) being given under the heading of parts. Part I, Upper Extremity; Part II, Head and Trunk; Part III, Lower Extremity; Part IV, Special Subjects. An exceedingly valuable feature is the presentation of Dr. Albee's work on Autogenous Bone Graft. The book is one which every doctor will find very useful and valuable. It sets a standard for the publishers which will be difficult to improve.

A TEXT BOOK OF SURGERY FOR STUDENTS AND PRACTITIONERS. By George Emerson Brewer, A. M., M. D., Professor of Surgery, College of Physicians and Surgeons, New York; Surgical Director, Presbyterian Hospital; Consulting Surgeon, Roosevelt Hospital, assisted by Adrian V. S. Lambert, M. D., Associate Professor of Surgery, Columbia University; Attending Surgeon, Presbyterian Hospital; and by members of the surgical teaching staff of Columbia University. Third Edition, Thoroughly Revised and Rewritten. Octavo, 1,027 pages, with 500 engravings and 23 plates in colors and monochrome. Cloth, net \$5.50. Lea & Febiger, Publishers, Philadelphia and New York, 1915.

This edition of Brewer's Surgery presents many new and interesting features. It has been completely revised and all the latest advances in surgery are included, making this single volume an authoritative work on surgery. Fourteen collaborators have assisted in the revision, each an authority in his chosen work, which greatly enhances the value of this edition. Chapters which show particularly careful revision are those dealing with hernia, infections of the hand, cellulitis, spinal cord, nerves, head, bone infection, and shock. The illustrations are numerous and very good, especially those made from Lumiere color photographs. It is a book that is valuable to both student and doctor.

PRINCIPLES OF HUMAN PHYSIOLOGY, by Ernest H. Starling, M. D. (Lond.), F. R. C. P., F. R. S., Hon. M. D. (Breslau), Hon. Sc. D. (Cambridge and Dublin), Jodrell Professor of Physiology in University College, London. Second Edition, with 566 Illustrations, 10 in Colour. Philadelphia. Lea & Febiger, 706 Sansom Street. 1915. Cloth \$5.00 net.

The second edition of this excellent text-book is just from the presses of Lea & Febiger, thus bringing the new work in physiology down to date. The book was written primarily for the use of the student, and as a student's college text-book of physiology, certainly fulfills the purpose for which it was intended.

So much new work has been accomplished in physi-

ology during the last few years, that every medical man needs to thoroughly review the subject, and new texts are a necessity for the purpose.

The author takes up the study of the various tissues or organs of the body in a methodical way. The book is not sufficiently large to contain all the experimental work done in this branch of science, but does contain in most instances reference to various methods of experimentation. Nearly six hundred illustrations accompany the text. Altogether, we think it a valuable text-book and recommend it to our readers.

A TEXT BOOK OF CHEMISTRY AND CHEMICAL URINALYSIS FOR NURSES. By Harold L. Amoss, S. B., S. M., M. D., Dr. P. H., formerly Chemist, Hygienic Laboratory, U. S. Public Health Service; Physiological Chemist, U. S. Bureau of Chemistry; Instructor in Physiological Chemistry, George Washington University Medical School; Assistant in Preventive Medicine, Harvard Medical School. 12mo., 268 pages. Cloth, \$1.50 net. Lea & Febiger, publishers. Philadelphia and New York, 1915.

The author in the preface to this little book makes an appeal for an extended course in chemistry for nurses, and the book is written to fulfill the needs of the nurse for such an extended course.

The author has written in a plain concise manner, and has presented the subject in such a way that he has made interesting reading from a dry subject.

Every nurse should have the book, and we would recommend it for use in training schools.

CANCER, ITS STUDY AND PREVENTION, by Howard Canning Taylor, M. D., Gynecologist to the Roosevelt Hospital, New York; Professor of Clinical Gynecology, Columbia University; member of the American College of Surgeons, American Society for the Control of Cancer, American Medical Association, New York Obstetrical Society, etc. Lea & Febiger,

Philadelphia and New York. 1915. Price \$2.50 net. ally welcome at this time. Nearly all medical journals have been publishing many articles on cancer during the last month, and this book will help to continue the work of the journals.

The author voices an appeal for more information regarding the disease and for a better use of the facts now at our command. He treats of the various forms of cancer in their several anatomical situations and of their metastases, emphasizing the question of early diagnosis and better diagnosis. The book is valuable and is an addition to cancer literature.

THE PSYCHOLOGY OF THE KAISER. A Study of His Sentiments and His Obsession, by Morton Prince, Boston: Richard G. Badger, Toronto: The Copp Clark Co., Limited, London: T. Fisher Unwin, 1915. Price, 60 cents net.

This little book is full of interest to those who, in their analysis of the Kaiser, fail to discover his claim of Divine Right for himself and the house of Hohenzollern, as he has claimed in the following utterances:

"It is the tradition of our house that we, the Hohenzollerns, regard ourselves as appointed by God to govern and to lead the people whom it is given us to rule."

detail the experimental work on various questions and the results. As the authors of these papers are working in a laboratory with excellent control facilities, the results and the data therefrom are of importance to the medical profession.

EXERCISE IN EDUCATION AND MEDICINE. By R. Tait McKenzie, A. B., M. D., Professor of Physical Education, and Director of the Department, University of Pennsylvania. Octavo of 585 pages, with 478 illustrations. Philadelphia and London. W. B. Saunders Company, 1915. Cloth, \$4.00 net; Half Morocco, \$5.50 net.

Until very recently exercise has occupied a very small space in college curriculae or in medical practice in this country. During the last few years athletic exercise is being taught and practiced more and more—sometimes not wisely. It is a lamentable fact that many of our athletically trained men have hearts that do not permit their owners life insurance. This, of course, is not owing to a correct athletic training, but rather to an unwise method.

The author has gone far into the field of physical exercise as it relates to the building of a good physique, to good health, to the correction of deformities, and to its place in our school systems. He tells one, and also demonstrates by numerous photographs, what is being done in this line in other places, both in this country and in Europe.

The book is of most value to students and teachers of Physical culture. It will be appreciated by educators and the medical profession.

And again:

"I regard my whole position as given to me direct from Heaven, and that I have been called by the Highest to do His work, by One to Whom I must one day render an account."

This book shows how the Kaiser's almost insane obsessions about his "divine rights" and his fear of democracy have plunged the world into the present war.

A MANUAL OF THE PRACTICE OF MEDICINE. By A. A. Stevens, A. M., M. D., Professor of Therapeutics and Clinical Medicine in the Woman's Medical College of Pennsylvania, Lecturer on Medicine in the University of Pennsylvania. Tenth Edition, Revised. 12mo. of 629 pages, illustrated. Philadelphia and London. W. B. Saunders Company, 1915. Flexible Leather, \$2.50 net.

The tenth edition of this popular handbook by Dr. Stevens will be welcome to medical students. The text has been revised, some chapters have been rewritten, and a number of new ones have been added.

A number of special subjects are given in a brief way. The book is primarily for students' use and for that purpose is admirably written and planned. We recommend it to the student body.

COLLECTED PAPERS FROM THE RESEARCH LABORATORY OF PARKE, DAVIS & Co., Detroit, Mich. Dr. E. M. Houghton, Director. Reprints.—Volume 3, 1915.

Parke, Davis & Co. have issued the third volume of Collected Papers from their Research Laboratory. These papers are written by scientific men, giving in

ILLINOIS MEDICAL JOURNAL

THE OFFICIAL ORGAN OF
THE ILLINOIS STATE MEDICAL SOCIETY

VOL. XXVIII

CHICAGO, ILL., OCTOBER, 1915

No. 4

Original Articles

OPENING ADDRESS.*

H. DOUGLAS SINGER, M. D., M. R. C. P.,
CHAIRMAN.
KANKAKEE, ILL.

Ladies and Gentlemen: It is my privilege to open this, the fourth meeting of Alienists and Neurologists under the auspices of the Chicago Medical Society, and I desire first to express my deep appreciation of the honor thus accorded to me. There has been some discussion in various quarters as to the purpose which these meetings serve. The excellent programs and attendance at the earlier sessions seem to demonstrate beyond question that they meet a definite need and all who have been associated with their promotion are satisfied that they have accomplished much by stimulating interest in the social problems discussed, not only in the medical profession of this middle west, but also in the public at large.

The program before us at this session is in no whit behind its predecessors, and as it is a long one, I do not propose to occupy very much of your time. It is but meet that I express our deep sense of gratitude to the man who was not only responsible for the inception of these meetings, but has faithfully and consistently worked to make them a success. That man is Dr. W. T. Mefford of this city, who has acted as secretary and to whom the arrangement of the program and such success as this meeting may achieve, are entirely due.

The topics which we are here to discuss have only within recent years been accorded one tithe of the social importance which is their due. Even today there is a lamentable lack of attention paid to them in our medical schools. This is the more extraordinary, when one realizes that man's

activities are so largely dependent upon his mental or cerebral modes of adjustment. Yet the physician has presumed to be able to understand and treat his patients while acknowledging an almost complete ignorance of the all-important co-ordinating and regulating mechanisms of the brain. It is this attitude which has rendered possible the development and exploitation of Christian Science and the many other so-called healing cults. Such success as they achieve is due to the fact that they consider, even if ignorantly and by chance, these higher means of reaction.

The greatest advance of recent times in the field of psychiatry and allied branches as I see it, is represented by the rapid strides which have been made in our conception of psychology as a biologic science. It is difficult to place credit for the formulation of this conception with any one man, but it seems to me that an epoch was marked by the work of Sherrington in his "Integrative Action of the Nervous System." In this was laid down a very definite framework for a reasonable, biologic interpretation of the phenomena of mental activity. As the result of such work the barrier which has so sedulously been preserved between the mental and the physical is gradually being torn down and we are coming to appreciate the fact that when the term "state of mind" is used it implies nothing more than a "state of body," a certain mode of adjustment of the effector organs of the body in relation to certain conditions of the environment. These questions are already being reduced to more definite terms, as for instance, is admirably demonstrated by the appearance during this past year of the collected work upon emotion in book form by Cannon of Harvard University.

This biologic concept is also being developed along somewhat different lines by the researches of the psychoanalyst. However much we may

*Read at meeting of Alienists and Neurologists, Chicago, July 12, 1915.

disagree with some of the far-reaching dogmatic assertions of Freud and his followers, we cannot deny that they have established certain fundamental facts and opened up an enormous field for future study, which cannot fail to bring us to a better understanding of man, his activities and disorders.

The recognition of the fact that the psychic and the physical are not merely parallel, but are essentially one, that the conscious bears exactly the same connecting relationship between the stimuli of the environment and the adjustment of the organism to meet it as does the simple reflex arc to the stimulus and reflex response of the lowest levels and types of nervous system, must necessarily bring neurology and psychiatry into closer relationship with the laboratory and the serologist. Perhaps no better illustration of this can be given than the avidity with which the researches of Abderhalden upon defensive ferments was seized for use by psychiatrists. It is unfortunately true that the most recent researches tend to upset the validity of many of the claims made as a result of the enthusiasm which was aroused, but the interest in such matters is at least a healthy index.

As a net result of this concept the phrase "mental factors" in the etiology of various disorders of adjustment, is now being recognized as having a definite biologic significance. The self-styled materialist has long scoffed at such descriptions as a refuge for the ignorant. Today we understand that there is nothing immaterial about them and the practice of medicine in all its branches cannot fail to be enriched and profoundly modified by the full appreciation of man reacting as a whole through his cerebral associations instead of merely as a composite of certain organs. Mental factors play a large rôle in man's adjustment to infection with parasites and an even larger part in many of the common ailments the physician is called upon to treat. Hughlings Jackson years ago made the statement that no man can be a neurologist without first being a psychologist, and it seems to me that this could be extended by saying that no man can be a physician without studying biologic psychology.

In concluding, let me announce that as this body is not an organized society, discussion of

papers will be welcomed from any physician. In view of the length of the program before us, it will be necessary to limit the time for the presentation of papers to twenty minutes and the discussions to five minutes. This rule I propose to enforce without fear or favor and I would request that each person discussing the papers will announce his name and residence clearly.

My first official duty as chairman of this meeting is that of introducing Dr. C. J. Whalen, president of the Chicago Medical Society, under the auspices of which we meet.

WELCOME.*

CHAS. J. WHALEN, A. M., M. D., L.L. B.
CHICAGO, ILL.

Members of the Congress of Alienists and Neurologists: As president of the Chicago Medical Society, the duty has been assigned me of addressing a word of welcome to the many friends who are with us this morning from other portions of the country. In expressing to you a word of welcome I feel as if I were extending greetings to my own family, for I am sure that none of you feel otherwise than at home while here. For here many of you stand at the portals of your alma maters, surrounded by teachers, friends, associates and familiar scenes that must awaken in your mind pleasing reminiscences.

Medicine as a department of learning, has from its inception in the occult religions and philosophies of antiquity to the present time, suffered many undulations and mutations; and like its congener, religion has from time to time been the captive of belief and imperious authority. Yet despite all the trammelling of human intellect and individualism characteristic of ancient and mediaeval times, it has nearly always been the first unit of learning to escape oppression and resume the journey of progress.

It is evident to anyone who will stop to consider, that one of the great social problems of our time, and one that very nearly concerns the welfare of the Nation, is the preservation among its people of the highest possible standard of health, both physical and mental. Given a Nation with

*Read at meeting of Alienists and Neurologists, Chicago, July 12, 1915.

every individual living in the enjoyment of perfect physical and mental health, it is easy to conceive such a people dominating the world by sheer force of its vitality. "The survival of the fittest is a doctrine that in the long run must prove true as surely as that a sound body is the necessary compliment of a sound mind."

Medicine stands today first among the beneficent institutions of the world. Through the labors of the physician disease is both prevented and cured; pain is assuaged; and the sum of human happiness is greatly augmented. Its progress has from the beginning been steady and uniform and is today advancing at a pace hitherto unheard of. Its power and usefulness is at present greater than ever before. However, much remains to be accomplished and to combine our efforts for the accomplishment for this high purpose is the aim of medicine at the present time.

The natural province of the physician is to combat disease; without disability the profession could not exist; the prevention of infirmity must, therefore, to a certain extent, prove self-destructive to the profession. The scientific physician, has already freely given the results of his labors for the good of humanity, and the public already owes an immense debt to the medical profession for scientific, conscientious toil for the betterment of mankind.

In the coming years this debt must constantly be increased and in no way can it be more gratefully done than in the promotion of adequate public education in the prevention of disease by the dissemination of knowledge and the dissipation of ignorance.

Those who have not given the subject of mental derangements special attention can hardly realize the progress made in this department within the last quarter of a century. Thirty or forty years ago there were no adequate text-books or journals printed in English treating on this subject. Now there are many and still they are inadequate to represent all that is being done. A quarter of a century ago or more, the subject was treated in a rudimentary fashion in the most conservative colleges and laboratory work along these lines were unheard of, now there is hardly a question in psychology, unaffected by the newer empirical methods.

Today evolution is at the door for students interested in studies of the mind. A recent development in the field of psychology deserving of special mention is criminology which has now been placed on a new basis, one which brings it into closer relations with jurisprudence. The tendency today is to regard crime as one form of human decadence, to be studied comparatively along with other classes of defectives, and treated not according to traditional modes so much as rationally and biologically.

A fault to be found with the present day standard of psychiatry is that this branch of science of most vital importance to the public welfare has been kept too long in the background. Instead of the superficial book knowledge heretofore required of a pupil, the time has arrived when our medical colleges should enforce a course of psychology in its curriculum, the standard of efficiency of which is on a par with any of the other branches of medical sciences taught in the institution.

Another reform that is badly needed is the conservation for educational purposes of the waste of good material that now goes on in most of our asylums for the insane. The state which recognizes its educational duties to schools and universities should intervene to utilize this material more effectively than it does at present. In this age when psychology is affecting so many other and remote branches of work and is itself growing so fast that the long delayed science of man seems near at hand, the realization of such an ideal would be most opportune. With all the munificence towards higher education may we hope to see it actualized in every institution caring for the mental defective.

As co-laborers in the great field of scientific effort for the best interests of mankind to this work, to this city, and to our friendship in the name of the Chicago Medical Society, I again extend you welcome.

We ask you to make the offices of the Chicago Medical Society at 25 East Washington Street, Marshall Field Annex, your headquarters during this meeting.

I now take pleasure in turning over the conducting of these meetings to the most excellent chairman of the Society, Dr. H. Douglas Singer.

MENTAL DISEASE.*

CARL W. SAWYER, B. S., M. D.

White Oaks Farm,

MARION, OHIO.

That the condition of the teeth has much to do with gastro-intestinal disorders is well known; that it has much to do with the general bodily condition is rapidly being granted; that it has anything to do with mental disorders is almost unheard of, yet anyone who is treating cases of so-called insanity is surprised with the fact that many mental cases have poor teeth and inflamed, suppurating gums.

So marked is the latter condition that we were convinced some time ago that there was a definite relationship between the mental state and the mouth condition.

Roughly dividing the cases into depressed and excited patients, it was soon evident that the violent, excited cases whose mouths could not be cared for in any way, had beautiful, white teeth and clean gums.

While the depressed cases, the so-called melancholiacs, had poor teeth or no teeth at all and suppurating gums.

Cultures from these latter showed various forms of bacteria, among which were staphylococci. Believing that the vaccines were indicated, they were given and a few cases showed marked improvement. The great majority, however, did not make any response, so it was concluded that while the bacteria might be present, they were not the real cause of the trouble in the majority of the cases.

While searching for other causative factors, our attention was called to the work of Bass and Johns on pyorrhea alveolaris. They, as you know, have proven that this disorder is practically always caused by the entameba.

Believing that in this discovery the condition that we were looking for had been found, we began the examination of the teeth of all patients in whom we thought the mouth condition had a bearing upon the mental state.

Up to the present thirty-five cases have been examined. Of this number twenty-six or 74.2 per cent. showed entamebae and nine or 25.7 per cent. did not show them. Part of these latter were cases where there was no reason to suppose

that entamebae were present; but they were examined early in the series to see whether or not the condition was existing in all cases.

Of the cases with entamebae 15 or 57.7 per cent. were male and 11 or 42.3 per cent. were female. The average age of the cases was 48 years. The youngest was 25 and the oldest 72. Age, though, probably has nothing to do with the condition, unless as the individual becomes older the gums become more susceptible to infection and the brain less resistant to the toxine.

In no case were the teeth in perfect condition, even on a cursory examination. In three they were in average condition. One of the three was not a mental case, but a neuritis case.

Two had teeth in fair condition. Twenty had teeth in poor condition, that is badly decayed. All had had teeth drawn because they became loose and all needed for years a large amount of dental work done. There is no doubt but that poor teeth accompany entamebic infection. Four of the cases without entamebae had good teeth. One fair, three poor and one had several teeth lacking.

The condition of the gums was very striking. Only two had clean gums. Sixteen or 61.5 per cent. had at examination a sufficient amount of pus to be seen with the naked eye. The other eight had shrunken, receding and red gums with pus microscopically.

Only 2 or 22 per cent. of the others had suppurating gums and four had normal gums. Pus about the gums or receding gums should be the indicator for an entamebic examination.

The mental state of the cases was interesting. Thirteen or 50 per cent. showed marked depression; four were agitated; three markedly confused. The general tendency of all, when other conditions did not play a part in the mental state, was depression, and we believe that that is the condition caused by the entameba.

The bowels ordinarily with entamebic infection are supposed to be diarrheic. Nineteen or 73 per cent. of our cases had a marked constipation. In many the rectum was packed and in all large amounts of fecal material were eventually removed from the colon. This was usually old, foul smelling, hard and accompanied by gas. Four cases only gave a history of normal passages and one had diarrhea alternating with constipation.

*Read at meeting of Alienists and Neurologists, Chicago, July 12, 1915.

The general physical condition of all cases of entamebic infection was poor; 73 per cent. were far below normal. The general diagnosis of the cases without entameba was as follows:

1 Acquired neurasthenia; 1 Paresis; 1 Chronic nephritis; 1 organic brain psychosis (syphilitic gumma); 2 Manic depressive psychosis; 1 Involutional melancholia; 1 Pulmonary tuberculosis; 1 Visceroptosis with its concomitant nerve manifestations; 1 Epileptic psychosis.

The 2 manic depressives had the ear marks of entameba cases, but the parasites could not be found. In one case we felt that this was due to the fact that the patient was an inveterate tobacco chewer and we felt that the tobacco killed the entameba in the saliva.

The diagnosis of the cases with entameba was as follows: Multiple sclerosis accompanied with depression, one. Under treatment this depression disappeared, but the other condition persisted.

Senile and pre-senile psychosis, two. One of these died one month after the use of the emetin, from a chronic nephritis which he had shown for years.

The other was very clear mentally when treatment for the entameba was given. Thyreogenous psychosis, one. This patient cleared wonderfully after treatment and made a rapid and complete recovery.

One was an acquired neurasthenia, who had been confined to bed for some time and who had a large number of complaints relating to the abdomen. She began walking soon after treatment was instituted and when last heard from was getting along nicely.

Two, multiple neuritis. One marked, one mild. The marked case improved rapidly after treatment and is now practically well. The other is still under treatment. One, meningitis. No treatment was given for the ameba and the case died 3½ days after examination.

Two, paresis. One did not remain for treatment. The other showed no signs of any change excepting in the mouth after the entameba treatment was instituted.

One, chronic nephritis. This patient had a high blood pressure and the dullness that accompanies long standing kidney and arterial sclerosis. He was much clearer after the hypodermics had been given, although part of this may have been due to psychological causes, due to a

marked change in his surroundings that developed at the same time that treatment was being pursued.

Two, epileptic psychoses. Both of these are still under treatment. Both are better, each having had but one attack since the treatment was instituted, while both were having them almost daily before the treatment was given. The improvement in these cases is hardly due to the entamebic treatment, though, and it is too early to state that it has had any definite effect on them.

Thirteen or 50 per cent. of the cases fell into the class formerly called melancholia or sometimes classified manic depressive psychosis. Of this number twelve have been given hypodermics of emetin. One was just admitted and he has not commenced treatment.

Of the remaining twelve two made rapid and complete recoveries. Both were clear within 14 days of the time of the last hypodermic. One case was not treated. One made no mental response to treatment. One is slightly improved. One improved and then owing to a kidney complication that developed, relapsed and stopped treatment. One discontinued treatment after considerable improvement and the remainder are all improving under treatment. One case improved and then stood still. Re-examination showed amebae present and under hypodermics she made another improvement but not as yet a complete recovery.

The treatment in all cases, but one, was 4 hypodermics of emetin, given one-half grain each day. In one case we used the Alcresta ipecac tablets. We prefer the hypodermic method, though, because it is the surest and easiest means of giving the drug to mental cases.

It is said that the drug is harmless. Five of our cases showed marked nausea and vomiting following its administration. In one instance this became alarming. Eventually all cleared.

In no instance did the emetin treatment alone bring about recovery. It seemed only to remove the cause. The cases in all instances needed general treatment measures, the same as any case with disturbed bodily conditions. Our cases were all subjected to hydropathic measures, massage, full meals, out-door exercise, and other lines of medication, and they all responded more rapidly

to them after the emetin treatment than similar cases untreated by emetin.

Having stated the above facts it seems that in conclusion it is justifiable to say that:

1. Entamebae are very common in mental cases.
2. They accompany, as a general rule, poor teeth.
3. They are practically always present with suppurating or purple gums.
4. They accompany particularly depressed mental states.
5. They usually cause constipation.
6. They may accompany other nervous lesions, multiple neuritis for instance.
7. Removing the entamebae does not cure the case, it simply removes the cause of the trouble.
8. Given a case of depression with poor teeth and suppurating or purple gums, one should look for entamebae.
9. Finding the entamebae, emetin should be given and followed by general upbuilding treatments.
10. The entamebae may be the cause of many cases of depression, melancholia and manic depressive psychosis.

SOME OBSERVATIONS IN PSYCHIATRY.*

B. F. WILLIAMS, M. D.

Nebraska Hospital for the Insane.

LINCOLN, NEB.

The student of psychiatry in the past has depended largely on *symptom complexes* as the best guide to a systematic study of the various manifestations of mental aberration. In the present day contemplation of the subject, so varied are the types and so mixed the symptoms that the modern psychiatrist has come to regard the study of symptom complexes as the study of a classification more or less feebly constructed. The symptom syndrome of paresis has ceased to exist, and the condition is now recognized only when serological findings, together with the history, demonstrates the existence of syphilis, the mental symptoms the result of faulty cerebration dependent upon an organic basis. Thus we find the modern psychiatrist, in fact, the syphiliologist, using his knowledge of neurology and

psychology as an aid in the interpretation of conditions.

The merest novice in the field of psychiatry early realizes the atypical as constituting a very conspicuous feature of mental alienation and that the mental manifestations of a given type are subject to a wide degree of variation, due to the more or less intermingling and overlapping of symptoms.

The literature in psychiatry deals but briefly with combined psychosis. Dr. Lind of the government hospital, in an article in the *Journal* of April, 1915, reports 808 cases, with adequate histories of two or more admissions to the government hospital, where combined psychosis existed in forty-one.

It is not uncommon in hospital practice to encounter an alcoholic psychosis which, on prolonged observation, reveals the existence of a praecox of long standing, showing through the influence of alcohol, accentuation of the residuals of the old psychosis. Praecox cases are also encountered who seem to have developed a psychosis on the basis of defectiveness. Arteriosclerotic or senile changes are to be found among the chronic insane. I believe, however, it is rare indeed, when a functional psychosis, active in form, shades gently and becomes merged with an active psychosis of a distinctly different type.

From the records of the hospital where I am connected, I wish to present four cases which seem to confirm the theory that mental alienation may exist as a combined psychosis.

Case 1. Man, 24 years old; school teacher. One sister now an inmate of hospital, suffering from manic-depressive insanity, one brother committed suicide. In the year 1893 he became depressed, entertained persecutory ideas and attempted suicide. Was admitted to the state hospital, where he was classified in the terminology of the day as a subacute melancholia. Under institutional treatment he improved and was discharged at the end of four months. Two months after discharge he was returned to the hospital and it is recorded that he was greatly excited, talkative and agitated. At the end of six months his exaltation subsided and he was again discharged.

Three years later he was again committed to the hospital in a condition of marked depression. This in turn was followed by a phase of exaltation, and at the close of eighteen months' treatment he was again released from the hospital.

Six years later he was returned to the hospital greatly exalted and apparently suffering a return of the manic-depressive episode. The exaltation continued for several months, and, as the press of activity

*Read before the Congress of Alienists and Neurologists at Chicago, July 12, 1915.

and psychic unrest seemed to subside, it was noted that he was somewhat more euphoric than during previous periods of convalescence, inclined to expansiveness, stiff pupils, facial tremors and a slight speech defect. He gave a double plus spinal Wassermann with a negative blood and 100 cells per cubic mm. with a positive tri-chloroacetic acid test. A diagnosis of paresis was made and the subsequent history of the case bears out the diagnosis.

Case 2. Male, 23 years old. Was admitted on four different occasions during a period of twelve years. Manifested the exalted phase of a manic-depressive psychosis, with recovery following each attack and only moderate and transient periods of depression, the last attack occurring in 1912. Patient was committed to the hospital in extreme excitement, great press activity, with marked increase of thought stream and scant attentive control. As the excitement decreased under institutional care, patient appeared disoriented with clouding of consciousness; showed little insight and marked memory defect. The mental deterioration was followed by motor disturbances, somewhat transient in form, but progressive in character, with a number of convulsive seizures from time to time. Serological investigation, together with the clinical aspect, indicated paresis and the case coming to autopsy verified the diagnosis.

Case 3. Male, 44 years of age; native of London, England, a graduate of Oxford, an attorney by occupation, but at the time having charge of educational work as superintendent of instruction. Presented a negative family history, but a personal history of spasmodic intemperance at a period of twenty years previous to the onset of psychosis. Was admitted to the hospital in February, 1892. Classified at the time of admission as melancholia and manifesting marked ideas of persecution. Depression continued for several months, followed by improvement. Without warning a transient epileptiform seizure developed, after which there was marked motor disturbance, facial tremors, speech defect and unsteadiness of gait. Patient assumed a stationary mental attitude, manifesting much speech defect and ataxia, but little memory defect. Showed remarkable insight, read the papers, conversed with great speech difficulty, but with eagerness upon current topics, manifested a keen insight into political and sociological problems. Wrote letters weekly to his relatives, all of which were connected, but prone to deal with details of events of long ago. Was self-appointed custodian of affairs on his ward and reported promptly by letter to the superintendent's office any detail which impressed him as needing attention. In this he showed reasonable insight and only minor impairment of judgment. Serological findings in the year 1913 showed increase in protein and albumin—22 cells per mm., with a double plus Wassermann to the fluid and a positive Wassermann to the blood. Manifested tuberculous symptoms in both lungs, broncho-vesicular respiration, etc., and on May 16, 1915, patient died with marked symptoms of pulmonary tuberculosis. In this

case there were doubtless lesions of the central nervous system of a degenerative type, slowly progressive and on a specific basis. The death of the patient occurred 23 years after the onset. The patient showed no remissions during this period.

Case 4. Male, aged 21 years. Classified as a high grade feeble-minded, manifesting no symptoms other than general mental enfeeblement, inconstancy and moral bluntness. After three years of institutional care became suddenly katatonic and retarded. The katatonia is so profound that the patient moves only when forced, is being fed with a tube and conforms clinically to the type of katatonia attending praecox cases.

SUMMARY.

The first two cases demonstrate the possible onset of a psychosis in a patient suffering acutely from a psychosis of a type quite dissimilar.

The third case reported is one of paresis, with apparently widely varying points of localization in the degenerative processes, more marked in the motor region and unlike the typical case less pronounced in the region controlling the higher process of intellection, showing remarkable retention, and the power of association only mildly disturbed, with the patient assuming a stationary attitude and an apparent arrest of the primary degenerative processes until twenty-three (23) years after the onset death removed the patient through the medium of an intercurrent disease.

Case four illustrates the evolving of a praecox case upon a basis of defectiveness, a condition which is likely encountered quite frequently, but to be regarded as somewhat atypical and in a degree representing conflicting types of psychosis, this case standing in bold relief to the accepted precocious and acute, yet introspective child that has been referred to as constituting the dementia praecox soil.

These observations lead safely to the conclusion that physical conditions are the prime factors in the etiology of mental alienation, the defective nervous system offering the most fertile soil for development of paresis and paresis to be regarded as the end product of syphilis, attacking the individual without regard to already established disturbances of cerebration.

By deduction we are forced to regard the cause of physical conditions, such as described, as the legitimate field for prophylaxis and further justifies us in regarding alcohol and syphilis, as sociological problems, a menace to the race.

The specific forms of mental trouble developing

from these causes have long been recognized, but we have evidence to support the theory that many so-called functional mental troubles are the result of the inroads made by alcohol and constitutional disease and the strain and stress they afford.

Our greatest forward step in prophylaxis will be accomplished when we effectually control the intemperate use of alcohol and the spread of venereal disease.

CARE OF THE INSANE UNDER THE ILLINOIS STATE BOARD OF ADMINISTRATION.

H. J. GAHAGAN, M. D.

ELGIN, ILL.

Superintendent, Elgin State Hospital.

The Board of Administration of Illinois was organized in August, 1909, pursuant to an act of legislature, creating this body to control the various charitable institutions of the state. Of the twenty institutions under control of this board nine are hospitals for the insane located at Elgin, Kankakee, Dunning, Anna, Peoria, Watertown, Jacksonville, Chester and Alton. The board is composed of five members and is bi-partisan in character appointed by the governor. The offices of the board are located at the state capitol at Springfield. Prior to the organization of this board the charitable institutions of the state were controlled by separate boards of trustees, the personnel of which was substantial in character and accomplished a great deal towards the proper care of the inmates in the various institutions.

Through the unifying of the state institutions to the degree that the institutions seem but one, the employees feel drawn together as one body working under prescribed regulations and with defined aim. There is one policy for all. To accomplish an end, the shoulders of all are put to the wheel to bring the result. Employees become interested in each other. There is no longer the isolation seen as though each institution is a little world of its own, working within narrow limits, achieving results small and not heard beyond local boundaries. There are brought about organizations such as the medical associations made up of the staffs of the hospitals. Here representatives meet to exchange ideas and report results obtained. New treatments are discussed and experiences with them reported so as to fix values.

Other matters outside of strictly medical are brought up such as food problems, construction possibilities, legislative needs, etc.

The recognition of the Civil Service Commission and co-operation by that board with the Board of Administration has carried out without exception high ideals in medical and training school departments, both of these reaching a high standard of efficiency. Positions in the medical service of these institutions are most attractive, giving stimulus to the active and energetic individual seeking knowledge on special lines, to reach a high degree of excellence. Salaries ranging from one hundred to two hundred dollars per month are paid to the physicians in the service with full maintenance for their family. Applications for positions on the medical staff are frequently received from various states outside of Illinois, particularly in the east, thus showing recognition of the high standards of the Illinois institutions.

The Board of Administration made possible the establishment and maintenance of the Psychopathic Institute. From here methods of examination and the classification of patients are prescribed. The uniformity throughout the state of these measures is of great importance; first for the statistical compilation, and also as a common knowledge whereby the discussion of cases can be readily and understandingly carried out. The scheme is comprehensive and instructive and the physician in using it obtains a complete understanding of the case before him. In order to train the physician in these methods of examination and care of patients groups of physicians are sent to the institute for instruction. This instruction is added to by the director, who at intervals visits the institutions to conduct clinics and lecture. The laboratory is for the use of all the institutions, various clinical, bacteriological, and pathological work in general is done for them. Aside from the local use of the results, the deductions made from the great number are more satisfactory and comprehensive. The final analysis of the given problem as to its medical worth is shared by all. In addition to the Psychopathic Institute each institution has a local laboratory. The Elgin State Hospital has a well-fitted laboratory containing all the necessary paraphernalia to make necessary investigations and research to facilitate the complete diagnosis. Here is also

installed a most complete and up-to-date x-ray apparatus, which is in active use at all times to promote therapeutic measures and diagnostic work. A pathologist is employed in this laboratory and is not handicapped by any of the regular service work of the hospital, thereby giving his whole time to making examinations of blood, sputum, urine, spinal fluid, Wassermann tests, etc. The medical staff meets with the superintendent twice daily. The morning session at eight o'clock is held for the ward physician to present his patients for diagnosis and treatment. The patient is called before the staff and questioned, then excused before an opinion is offered. At eleven o'clock the staff again meets to present their reports as to the conditions of the patients in their charge and to discuss matters of treatment and general routine.

An adjunct to the medical department which strengthens the aim of a state hospital, made possible by the Board of Administration, is the Training School for Nurses. It broadens the field for the trained nurse and creates the demand in a large number of institutions for the nurse where the training is uniform making it possible for her to fit in in any hospital to which she may be sent, as her training is made of the highest character, as determined by thorough study and investigation. At the last commencement exercises in the state hospitals sixty-five nurses were graduated, molded from the attendant force. Thus it becomes not far distant to have trained help on all wards, which means the removal of the hospital tramp, lessening neglect and abuse by thus developing and molding the probationer into the trained nurse, through the methods that have been determined by experience in the handling of a large school. The accomplishments of a body whose intelligent interpretation of experience has been gathered in the handling of the problems of a great number of institutions, must be for good. As a reward for merit the salaries of the graduates are increased fifty per cent at once. This goal is within the reach of every attendant in the service.

The abolition of restraint and seclusion in the state hospitals was a great accomplishment. While one may say such an act was courageous, it was not courage akin to the leap into the dark, but brought about by this knowledge after careful analysis of

conditions that such a step was possible and desirable; a measure which will pass into history as the most humane ever promulgated by an administrative body. By one stroke of the pen in the hands of President Kern of the Board of Administration the humane care of the insane stepped forward fifty years. The superintendents have caught the spirit and the desire to enhance the greater liberty of the patients and are constantly increasing parole measures; removing outside and inside screens and all evidences of prison appearance and creating more open wards. Giving Elgin as a criterion we have at present seven hundred and fifty out of a total number of two thousand patients enjoying the liberty of the grounds to come and go at their will. The restraint problem through progressive steps has gradually been solved. The entire abolition at one fell swoop would seem revolutionary and impossible to carry out, but strange to say we have had no difficulty. These inmates suffering from acute forms of mental trouble giving evidence of delirious, exalted emotions, mingle together like children, unfettered and unobstructed in their bodily movements, and through this expenditure of surplus energy sleep like babes at night. We rejoice in the fact that mechanical restraint paraphernalia has been consigned to the scrap heap. The establishment of hydrotherapy in the treatment of the acute insane allays the excitement, producing a sedative condition formerly only obtained by restraint and stupifying drugs.

This humane care did not stop with the care of the patient. The same analysis shows that employes were being worked thirteen and fourteen hours a day, conditions not permitted in the industrial world. Again this body stepped in and created the eight-hour day, thus assisting us in promoting better supervision, as the attendant is more alert and active with the reduction of five hours from his former labor.

The dentist in the state hospital was indeed a welcome innovation; the care of the mouth and teeth being indeed quite essential to eliminate pain and distress and also to promote mastication of food and consequent better digestion.

The food and clothing furnished to the inmates of the Illinois State Hospitals is of the very best, as specifications are furnished to each superintendent by the Board of Administration whereby it is not possible to buy that which is

not up to the highest standard. Samples of food-stuffs are sent to the Illinois University for chemical analysis and if not up to the standard of the specification they are rejected. Inspectors with samples of various products ordered according to the specifications are sent by the Board of Administration to the hospitals and reject all those supplies not specifically sold. Special efforts have been made to have the food well cooked and properly served to the patients with an equipment of plates, cups and saucers, knives and forks, side dishes and clean table cloths. In order to facilitate this service an inspection is made at each meal by a member of the staff assisted by supervisors and housekeeper. A copy of each meal is on file at the office for the inspection of the public and a copy is also sent to the Board of Administration in the regular daily report blank.

Occupational treatment, regarded as a most necessary therapeutic measure is carried out within proper spheres, always considering the desire and limitations of the individual. Amusement to the patients is furnished liberally with concerts, motion picture shows, vaudeville, minstrels and dances. Flowers and plants are supplied to the wards in profusion while baseball, lawn tennis, croquet, etc., are daily features in season.

Regardless of the extent, every injury received by a patient, from a pin scratch to a fracture, is reported to the Governor, Board of Administration, State Board of Charities and to the relatives or friends of the patient; thus wide publicity is given. Cruelty at the hands of an employe means prompt suspension and in many cases arrest and prosecution of the guilty one.

This paper would be incomplete were I to ignore the great assistance afforded to the Board of Administration by the State Charities Commission, a body which in a great measure contributed to the enactment of the law creating that body. The quarterly inspection of each institution by Mr. A. L. Bowen, secretary of this commission, is very thorough and complete. The results are reported in the *Institution Quarterly*, of which Mr. Bowen is the editor. I have received valuable assistance and advice in my duties as superintendednt from this gentleman, whose superior qualifications as an expert in the charity service is national in character.

Being a native of the grand old prairie state of Illinois I am naturally resentful of the unmerited, long distance criticism of our charitable institutions and those of western states generally. The golden opportunity presents itself at this time to reply. You representatives of the various states assembled for discussion of such vital subjects involving humanity, will, I hope, appreciate the feeble efforts I have made to recite what we in Illinois are doing for the amelioration of those dreadful symptoms of that most awful of all diseases—insanity.

In conclusion let me urge that this body go on record insisting that all measures of restraint be abolished in the care of the insane everywhere. Let kindness, sympathy and cheerfulness be the watchwords.

750 South State Street.

ABNORMAL CONDITIONS OF THE THYROID GLAND AND ITS RELATIONSHIP TO NEURASTHENIA AND MENTAL DEFECTS.

CHARLES L. REEDER, M. D.
TULSA, OKLA.

In the consideration of abnormal conditions of the thyroid we must first consider the normal gland and its importance to health. None will question the fact that the normal thyroid generates and is responsible for a secretion that is distributed to the general circulation which serves to neutralize the toxemia incidental in the course of normal metabolism, and that it is of great importance to the welfare of the organs and tissues; that the circulation thus charged exerts influence directly and indirectly; that the activity of the secretion in the normal thyroid, in all probability, is returned from the general circulation with little loss to be again treated by the normal gland. By many, it is believed this influence is maintained through the nervous system.

Owing to the vascular construction of the thyroid and its abundant blood supply, the theory has been advanced by many that one of its functions is to regulate the blood supply of the brain.

From chemical experiments and reports its affinity for iodine has been so thoroughly established that I believe it is now an accepted fact that iodine is a permanent constituent of the gland, and while this chemical is absent in the

new born child it would appear that the gland becomes a repository for this vital chemical extracted and stored from food.

While the older writers neglected this important subject, yet Mackel as early as 1806 reported the enlargement of the thyroid during menstruation and pregnancy, and other early writers indicated that the thyroid in some peculiar manner regulated the supply of blood to the brain. But it was not until 1877 that Ord associated myxedema with abnormal conditions of the thyroid. The early theory considering the anatomical construction of the thyroid is well founded. The thyroid glands with their numerous blood vessels undoubtedly are in direct communication with the brain, and their well developed capillary system must, to a great extent, influence the cerebral circulation, thus equalizing the circulation and preventing a rush of blood to the arteries of the brain, or acting as a repository for the time being for the cerebral vein.

The great importance of the normal thyroid gland to the life and well-being of the organism is best demonstrated and proven by the fact that the complete removal of the thyroids gives rise to serious disturbances, both mental and physical, usually with fatal termination, and reports showing experiments remove all reasonable doubt that the thyroid is at least in part under nerve control and that its active substance enters the circulation in response to nerve stimulus.

It is claimed that iodine starvation may produce simple goitre, which is an argument demonstrating the importance of iodine as a constituent element for the equilibrium of the normal thyroid. While there has been much controversy concerning iodine of the gland in health and disease, the reports of experiments indicate the iodine constituent in the thyroid of Graves' disease is less than in the normal gland.

Considering the value of the internal secretion of the thyroid, its involvement in the cerebral circulation and the nervous system, it is highly important that attention be given to the thyroid of a patient presenting an abnormal blood pressure and pulse rate, and it is of equal importance to take into consideration any disfunctionating thyroid, regardless of external indication of goitre or enlargement of the gland. That such conditions are a factor causing insanity has been

well established by observing doctors in many of our state institutions, and when we find the gland enlarged, having an increased blood supply—such symptoms as increased heart action, general weakness and abnormal blood pressure, we are face to face with an abnormal condition that will result in progressive neurasthenia which may affect the mentality of the patient. If we have for our attention a case of Graves' disease, we realize the value and importance of the normal thyroid gland and a case requiring constant and continuous care and treatment.

It is not the intention of this paper to take into consideration the especial value of medical or surgical treatment for the thyroid, but I am striving to impress the value of early diagnosis in its abnormal conditions, as it is one of great importance for the successful care and recovery of the patient. The early cases occurring in young women from ten to twenty-four years of age are the cases that are so much in need of early diagnosis, while the patients from twenty-five to forty years of age are oftentimes passed over with little thought of a serious complication from such an insignificant cause. In all of these patients very little evidence of goitre may exist, but the pulse rate may be high, frequently 105 to 140, with an abnormal blood pressure; the pulse is thin and rapid; elimination faulty, showing evidence of auto-intoxication and general toxemia. Such patients are too often placed upon opiates and nerve sedatives, nerve tonics and eliminants in the hope of benefit. But they require more than ordinary care and attention and the treatment that will render the best results will take into consideration the entire diet, the hours of sleep and recreation, or insist upon absolute rest in bed until the aggravated symptoms are understood and controlled, observing especially the thyroid and the other ductless glands.

I am not unmindful of the argument advanced by the surgeon in relieving hyperthyroidism and that the internist has little to do in alleviating abnormal conditions of the thyroid, but for all that, the physician is the proper factor in restoring the patient. Regardless of the fact that an operation is necessary the physician and not the surgeon is responsible to the patient before and after the operation—before the operation in preparing for such a trying ordeal and after the

operation in caring for the many neurotic symptoms that are so alarming to the patient.

Regardless of the successes of surgery in thyroid complications there is a disposition to operate too often and from all information available, medical treatment for goitre has been quite successful. While the mortality rate from surgery appears to be excessively high and the comparison of statistics utterly impossible, yet in my opinion they would favor the medical treatment. On the other hand, when we consider cases referred to the surgeon as being severe and surrounded with unfavorable complications, the statistics should not detract from the value of surgery.

Statistics indicate that such mental diseases as dementia praecox, melancholia and general paresis are frequently complicated with Graves' disease, but what factor the abnormal thyroid is in this condition has never been determined. Aside from the belief that the future may give light, we must be content and hope and anticipate in the future more positive information.

During the past ten years from close observation, I have found that when my patients presented mental depression, insomnia, loss of weight, intestinal indigestion with constipation, faulty assimilation, painful nervous headaches and every other symptom of neurasthenia, a close examination of the neck would indicate some abnormal condition of the thyroid. While I do not attempt to complicate a disfunctionating thyroid with every case of neurasthenia, I do believe that a careful examination will determine the fact that more than 50 per cent. of such cases have thyroid complications and an early diagnosis and prompt and persistent treatment will prove of untold value.

PSYCHOSES IN TWINS.*

PHILIP B. NEWCOMB, M. D.,
Clinical Director, Osawatomie State Hospital,
OSAWATOMIE, KANS.

Shakespeare, in his *Comedy of Errors*, has made pleasantly familiar to us the trials and tribulations of twins in the story of the two Dromios, most similar and attendant squires to Antipholus of Syracuse and his twin of Ephesus:

"the one so like the other
as could not be distinguished but by names."

*Read at meeting of Alienists and Neurologists, Chicago, July, 1915.

However, the earliest chronicles relative to the behavior of twins are found as part and parcel of the first records of the human species, that is to say, in the tradition folklore and mythology of the various race branches. One recalls immediately the tale of Romulus, eponymic founder of Rome, and his twin brother Remus, together with that of Amphion and Zethos, their Greek congeners, who raised the walls of Thebes of the Seven Gates. Castor and Pollux likewise belong to the goodly company of geminate gods and demi-gods, while the names of Esau and Jacob fall familiarly upon the ears of him who is versed in the traditions of the Hebrews. The sagas of the northern peoples and the fables of the East furnish prototypes and parallels for the instances already mentioned.

It has been said that all mythology must turn to psychology for elucidation. (1) If this be true can we then argue, from the very multiplicity of the twin myths any essential human interest of more than ordinary amount in the subject per se? The writer is of the affirmative opinion. One of the original theories concerning the origin of all myths, that of Adolph Bastian (2), assumes the existence of certain elementary thoughts so that the unanimity of the myths is a necessary sequence to the uniform disposition of the human mind and the manner of its manifestation, which, within certain limits, he believes is found identical at all times and in all places. But the Freudian interpretation of mythology (3), would bid us discard the purely intellectual factor, to forsake the assumption that the myth as an expression of the philosophico-religious ideas of the individual lies close to the foundation of the life of the human psyche. However, an acceptance of their conceptions concerning the wish phantasy, which makes the myth only a retained fragment from the infantile psychic life of the individual and race, need not disturb our hypothesis. As a matter of fact the explanation of the twin fable on the Freudian basis (4), as merely a variation of the original birth myth complex serves, it would seem, but to accentuate the primitive fundamental character of the interest manifested in the subject of twins from earliest days by all mankind.

The literature and drama of later periods, assuming the mantle of the ancestral mythology, offers at least objective evidence that the mind of

man, whether it be from the intellectual or from the affective standpoint, continues to find some certain fascination in the theme. And should we care to pursue the investigation slightly below the normal level for the race and time, it will be found that in the popular imagination, among the illiterate or superstitious, there is no topic upon which a greater amount of erroneous information is treasured, unless it be the perennially favored one of maternal impressions, than concerning the supernatural ties both mental and physical supposedly existing between the two mysterious personages delivered into the world at the same parturition.

The medical mind, however, should find its own peculiar interest in the subject of twins and especially in the occurrence of mental disease in twins since, established in the belief that like twins originate from a single ovum with two nuclei and dissimilar pairs from separate ova fecundated at the same time, we have here for observation two individuals who have been exposed to precisely the same prenatal influences. Twins are therefore said to be "brothers with a closer tie" and the conclusion is reached immediately from the physical resemblance frequently, but not necessarily, observed in such persons that an equal similarity likewise exists in the intimate organization of the nervous system or a close analogy in cortical structure, and the physiological or pathological consequences that result. It is at precisely this point that the question may properly be raised, that granting an essential basic human interest in the subject of twins as outlined above, whether some of the psychiatrists of the past have not yielded more to the potency of its mystic spell rather than follow the guidance of sound pragmatic instincts in their observations of the psychoses of these individuals.

The older psychiatry, even that of two decades past, was insistent upon the differentiation between the insanity of twins and mental aberration merely occurring in twins. We find the late Benjamin Ball (5), for instance, laying down the following criteria as essential for the establishment of veritable twin insanity:

1. Simultaneity of occurrence.
2. Parallelism of insane conceptions.
3. Spontaneity of the delirium in each individual.

That this distinction is perhaps an arbitrary

and not essentially a correct one would at least seem possible from a close analysis of some of these cases which are spread upon the record. With all due respect to "the fathers" the thought obtrudes itself that at one time the twin with a psychosis was surrounded with a halo of romance, the golden luster of which will hardly withstand the acid of modern psychiatric conceptions and also that no little weight was thrown upon the crutch of coincidence for the support of many of their contentions as regards conformance to fixed type.

Within the last few years other instances of insanity in twins have been reported, by E. Goransson (6), Philip Smith (7) and Schultes (8) of Ilenau, among others, welcome additions to the fifty or more cases previously recorded, and there seems to be moreover a growing tendency to discard the mystical and marvelous in the treatment of this subject and to regard as prime etiological factors only the elements of heredity and induction. Heredity, it is obvious, dominates the situation and insanity in twins is perhaps the highest and most striking manifestation of this force; but the influence of induction cannot be excluded in the majority of instances, as favored by the necessarily close intimacy of the two individuals and the action upon both of the same environmental influence during a like and early period of development.

The following three sets of twins are illustrative of the above points in some measure and of the six individuals concerned four are now resident in the Osawatomie State Hospital and all of them have at some period been under hospital observation.

Pair 1. Charles and John C. (No. 6072 and No. 6073), twins, aged between twenty and twenty-two years at time of admission on two contiguous days, Nov., 1903. History meagre; mother a prostitute, father unknown; imbecile type, grew up on streets without education, public characters who, upon reaching adult years, became county charges at alms house because of inability to support themselves. Marked physical resemblance. Fact of twin birth corroborated upon a visit of mother to hospital. Psychosis of several months duration in each when admitted. John first manifested symptoms. Charles a short time later evidenced similar derangement. Continuous association recorded between the two at county institution as well as in early life. Upon admission both were filthy, destructive, confused and violent. No record of content of delusions or range of hallucinations at that time. John has continued active, somewhat excitable and evidencing constant and numerous man-

useless to lock the barn door after the horse has been stolen is particularly applicable in nervous and mental conditions. The time for the application of mental hygiene is in childhood, when the material to be molded is still soft and pliable, while habit may be made servant rather than master.

It has been said that the education of the child should begin with the grandparents. This is, to an extent, true, for the forces of heredity, though obscure, must be reckoned with. Certain varieties of behavior, as reflex activities and instincts, either exist at birth or arise later independent of experience. Colvin says²: "No form of behavior is absolutely created by the environment. Education does not bring into existence something out of nothing. Education modifies what is already present in some degree; it selects and preserves certain modes of expression, eliminates others, and again recombines into new complexes the elements of behavior found in still other relations. If the organism does not possess at birth definite means of reacting to its environment, it would soon perish in the struggle for existence. It never could be educated." We must not be too hasty, however, to attribute solely to heredity faulty modes of reaction without first taking into consideration the environmental forces of example. Traits and characteristics may reoccur in children and grandchildren, or even more remote descendants, and still not be due to heredity. Lack of emotional control may be passed on from generation to generation simply because it has become the usual and accepted mode of reaction to situations of stress, and because the deterrent effects of discipline, education and proper hygiene have never been properly utilized. In some families it would seem that faulty feeling tones of discouragement, pessimism, and discord are imbibed with the mother's milk. What chance have impressionable children for normal development under such circumstances? Heredity is made the scape-goat for faults and conditions which would admit of easy correction were it not for the indolence, indifference and irresponsibility of parents and others. Johnny may have his grandfather's quick temper, but does his father encourage self-control? Jane may be as unstable emotionally as her grandmother, but does her mother show her how to meet occasions of stress with reasonable forti-

tude and overcome childish outbursts with calm understanding and forbearance? That many disorders of environmental reaction are due rather to faulty example and defects of training than to purely hereditary causes is shown by the distinct changes in character with relief from nervous symptoms following psychotherapy and re-educative measures of various kinds.

Clark,³ after long, continual study, decided that "out of the sum total of nervous affections the special physician was called upon to treat, the majority of them were functional and had their origin for the most part in those who possessed illy-organized physical and mental habits." He believes "that in a few years sufficient careful studies of the more common forms of the psychoneuroses will have been made so that we may lay down rather specific and general rules in parental and school education for the proper bringing up of neurotic children so that the neuroses may be less frequent or at least much easier handled when the psychoneuroses do occur."

I do not wish to ignore the fact, as apparently do many of our medical psychologists of the present day, that developmental hypoplasia, congenital or acquired, is the foundation upon which the superstructure of psychic mal-adjustment is reared. The neuropathic constitution is not a figment of the imagination. Hence the more need for a broad conception of mental hygiene, sufficiently broad to embrace every agency and measure that can be utilized to contribute to the well-being of the individual.

While a matter of considerable difficulty to begin the education of a child with the grandparents, it is possible to begin with the parents, and it should be within the province of the physician to advise prospective mothers and fathers how to so modify their own habits of conduct as to best conserve the interests of their offspring. Eugenics, while an interesting and in many ways useful study, is not and will likely never be an exact science, capable of general application. While admitting that it is unwise, and worse, for the epileptic, the feeble-minded and the insane to beget children, to insist upon an absolutely clean family history as a condition for license to marry would mean a nation of celibates, of perjurers, and of profligates. Like the Irishman's camel, "There ain't no such animal." In this connection I am reminded of the *nouveau*

riche who gleefully detailed to a friend the large sums he was expending to have a genealogist search out his family tree. Some time later the friend inquired how the search was progressing. "Sh!" said the rich man, "I'm paying hush money now." So far "eugenic marriages" and "eugenic babies" have shown no superiority over the old-fashioned kind. In one instance, it is said, the expected "Superman" turned out to be a girl. A reasonably healthy man and woman living under normal hygienic conditions with fairly clean family records, stand a pretty fair chance of having children mentally and physically healthy, provided they receive the proper care during the entire period of development.

It is the custom to estimate the age of the individual from the time of his birth, when he begins a separate independent existence. He is, however, capable of being influenced by environmental conditions from the earliest moment of conception. The great difficulty in determining whether causes be purely hereditary or environmental lies in this fact, and ignorance of this fact is the reason for much unmerited blame being placed at the door of heredity, especially by those agitators whom a little knowledge has made dangerous.

Of the environmental causes capable of exerting their influence early in the life of the individual, alcohol may be taken as an example. Studies on the part of many well qualified observers tend strongly to prove that alcoholism even of mild degree in the parents, especially at the time of conception, has a markedly deleterious effect upon the offspring. (A very potent argument against vinous bachelor and wedding suppers; and in fact against tippling at any time during the marital state.) Although there are some scientists as Professor Karl Pearson and his associates in the Francis Galton Laboratory of Eugenics in the University of London⁴ who hold that alcoholism *per se* does not result in deterioration of the physical and mental powers of the offspring, others possessing the advantage of long clinical experience continue to hold the opposite view. Dr. Hyslop, for instance, in his presidential address to the Society for the Study of Inebriety⁵, very conservatively states that there is evidence supported by experiments on animals, that alcoholism tends to increase the number of births, but to render the offspring

weaker. Epilepsy, mental weakness, insanity, deafmutism, stunted growth, and other states transmitted by heredity, are apt to be not only intensified, but make their appearance at an earlier age when parental alcoholism is a factor. It accentuates the downward trend of psychoneuroses, and with each successive generation the offspring become alcoholic or degenerate at a relatively earlier age. In families prone to degeneracy, alcohol appears to Dr. Hyslop to put the finishing touches. It sets alight the existence of neuroses and psychoses which might be on the wane, and renders the offspring more liable to the transmission of the degeneracy not only in parental intensity, but in manifestation at an earlier age.

After conception the environment of the mother becomes that of the developing child. Diseased states of all kinds have a vitiating effect upon cell development. It is thus the duty of the expectant mother to prevent contagion by avoiding contact with illness of any form. Again, certain unhealthy habitual states of mind, as depressive or disruptive emotions and feelings, apprehensions, fear of disease and fixed beliefs in fictitious disease, illogical doubts, scruples and anxieties; habits of thought; such as constant introspection, concentration of the attention on the physiological functions of the body, etc., bring about disorder in function of various organs.⁶ The possible effect upon the child of derangement of bodily function should be sufficient to cause the mother to adhere strictly to a régime assuring an existence free from emotional turmoil, by controlling her anxieties, moods and other faulty habits of thought. Equilibrium is with difficulty attained when the co-operation of the husband and other members of the family is lacking. Pity and extravagant sympathy are harmful, but tactful consideration and understanding will do much toward making the period of pregnancy one of comfort and joyful anticipation. The *bête noir* of expectant mothers, by no means limited to the ignorant, is the supposed influence of maternal impressions. Many women pass miserable hours fearing their child will be "marked" or deformed because of some pernicious sight, dream or thought. The public should be instructed that maternal impressions have no scientific basis and belong entirely in the category of "old wives' tales." Monstrosities and

other defects of development are relatively common and fall into definite, natural and simple classifications. Coincidence may be multiplied, but direct scientific proof is lacking. The only danger to the child lies in the modification of maternal bodily functions engendered by the fear itself. It is said that Greek women of ancient times in order to ensure cheerful impressions had their apartments filled with beautiful statues, paintings, and tapestries, and that this was one cause of the physical beauty of the race. The period of labor should be approached with courage and fortitude, as an ordeal it is true, but one which has been safely passed by other millions of women, by many cheerfully. It is wonderful how utterly forgotten is the suffering when the new-born babe is placed in the mother's arms. It is natural that there should be a desire to escape pain at this time. But when such escape is purchased at the possible risk of permanent injury to her child, such desire becomes not only selfish, but little short of criminal. Narcosis of the mother through powerful drugs cannot but affect the organism which is still supplied by the same blood. Risk to the child does not terminate with birth, as morphin and similar drugs are excreted in the mother's milk for some time after their administration, with resulting danger of damage to the delicate nervous system. "Twilight sleep" and other forms of narcosis so broadly exploited by certain lay magazines is not justifiable upon any ground in the labor of normally constituted women. When conditions are abnormal it is for the obstetrician to decide.

Bottle-fed babies result from stress of social life, cosmetic reasons, imagined inability, lack of sustained effort and—in a very few instances genuine inability to nurse. Taylor says⁷, "The chief enemies to breast feeding are social demands, fashion and accommodating physicians." Still⁸ believes that convulsions are much commoner in hand-fed infants, and I have myself noted the frequency of bottle feeding in children giving other evidences of nervous instability. Bendix⁹ states, "The young mother should be told that it is her sacred duty to nurse the child, and the physician should exert all his energies in assisting her to this end and he should protest with equal energy against the not un-

common inclination to avoid this duty for social or supposed aesthetic reasons."

Under normal conditions the new-born infant spends the greater number of his hours in sleep. He is quickly tired by the unwonted stimulation of his sense-organs, awakening from time to time in response to various stimuli, as hunger and pain, he quickly falls into repose as soon as the disturbing influence is removed. The first few months is an important period in regard to future nervous and mental stability. Undue stimulation through rapidly succeeding sensory impressions can not but lead to neural exhaustion with far reaching harmful effects. Though sensation is the basis of all mentality, the various sensory stimuli should follow one another in orderly succession rather than in a heterogeneous jumble. I am not of those who hold that the infant should lead a purely vegetative existence, with attention only sufficient to ensure bodily growth. Motherhood, and for that matter, fatherhood too, is entitled to some enjoyment of the wonderful new being for whose existence they are responsible. It is small wonder that some mothers delegate the care of their babies to paid employes if such care is to be limited to the absolutely necessary natural needs. Loud noises, brilliant lights, rapid movements, rocking, dangling, ticking, etc., should be avoided, but it is carrying the Spartan idea too far to deprive the parents of all fondling and caressing. The indissolubility of maternal caresses and the idea of motherhood is shown in most pictorial representations of this relation, and in the best known Madonnas. May not the human Christ touch have come through the human Mother touch of His early years?

The automobile, the street car and train, the moving picture show, the phonograph and piano, the high power electric light and many other conveniences and tribulations of urban civilization have their influences in over-stimulating and exhausting the delicate nervous system of the young child, and the frequency with which children, even of parents who should know better, are exposed is surprising. It is small wonder that we are a race of neurotics. Early over-stimulation leads to precocity, and precocity to early deterioration. On the other hand, careful and well-directed application of sensory stimuli during infancy and early childhood is a powerful aid

to natural development. Sensory training cannot be too early begun, but must be adapted to the delicate nervous mechanism of the individual and never must it interfere with sleep or rest periods, or be carried to the point of exhaustion. Crile¹⁰ has shown that exhaustion from any cause may lead to impairment and actual destruction of brain cells.

The fond mother instinctively uses simple methods of sensory training when she clasps the infant to her breast, affording him the sensations of warmth, softness and pressure; when she inserts her finger into his palm to be clasped by the tiny fingers, a reflex act that early makes its appearance; and when she dangles a rattle or shining object before his eyes; aiding in the establishment of co-ordinate movements.

Early infancy is not too early to begin the inculcation of orderly habits of thought and action, of utmost importance in character formation. Habit is not dependent upon intelligence, and in some forms may be instituted early in the mental life. Feeding at regular intervals, followed by regular periods of sleep should be established in the first few weeks. The infant, from birth, should be accustomed to being placed in his crib while awake and to go to sleep without rocking or other aid. Training to proper control of the rectum may be accomplished by intelligent effort as early as three months. It is possible by the tenth or eleventh month to train normal children to indicate a desire to empty the bladder. Too much cannot be said in depreciation of the use of the rubber pacifier and the habit of thumb-sucking. Infection by disease germs and interference with the development of anatomical structures are not the only dangers which result from these habits. Not only do they absorb the attention to the exclusion of other sensory impressions but they have a sexual significance as well. Regular habits established in infancy should be carried through childhood into adolescence and youth, with modifications suitable to varying ages and conditions. Bathing, like other measures belonging categorically in the domain of physical hygiene, may be made an important phase of mental hygiene. The psychical effect of a sense of physical cleanliness is evident to all; but there are other important advantages in regular bathing. The pride of the proverbial Englishman in his morning "tub" is not without

foundation. It takes courage to jump out of a warm bed and subject one's body to an icy spray or plunge. It is the requirement of this very element of courage that renders it so useful. The cold bath tends to engender a feeling of confidence, of power and self reliance, distinct from its effects of stimulation of metabolism, nerve tone and excretion. The daily shower may be initiated as early as eighteen months. A word of caution is necessary, as it is not advisable to suddenly introduce a delicate, enervated child to the rigor of the cold shower. He should be first prepared by a course of rubbing and sponging.

Regular open air exercise, begun in infancy by keeping the child out of doors as much as possible during both waking and sleeping periods, should be continued, even at some sacrifice of conventional indoor occupations and activities. A love of open places, of fresh air, and the phenomena of nature will be fostered which will go far toward maintaining mental equilibrium later in life. Open-air sleeping, though considered an uncomfortable fad by those whose horizon is bounded by four walls, is a powerful aid in establishing and maintaining mental balance. Fear of the dark, of thunder and lightning, and of being alone tends to disappear when a day of healthful activity is followed by a night in the open under the stars. If the fundamental primitive fear instinct alone, as Boris Sidis¹¹ believes, is the source of all psychopathic maladies, it should be the first aim of mental hygiene to cultivate those traits of character which would lead to its subjection.

Among the bad habits early acquired by children is that of fancied aversion to particular articles of food. This may have occurred through over-indulgence, through unpleasant sensory impressions upon an untrained taste, or merely through imitation of an older individual. Adults should early learn to place a curb upon their tongues and actions in the presence of children and should never for an instant forget that they are the models upon which lives are being patterned. I have seen a hungry child allow his plate to go untouched for no other reason than that an older member of the household had done the same at a previous meal; and refuse articles for which he had a real fondness, because a guest the day before did not "like them." I have made it a rule at Wildwood Hall that no member of

the household shall voice a dislike of any article of food, or shall refuse it when offered. Eating of it is not compulsory, it may be picked at a bit and allowed to remain on the plate, but without comment. The statement of the child that she doesn't like this or that is met by "O, here everyone eats some of everything put before one." It usually is not long before the despised dishes are among those most relished.

In the development of normal mental life, much depends upon the early recognition of the value of pleasant and unpleasant feeling tones. It is the affective consciousness (feeling) that gives value to experience. To pure intelligence the object of knowledge is cold and colorless. "On the other hand, feeling gives a *warmth* and *glow* to experience; it reveals a world filled with *worth* and pulsating with human *values*. In normal experience these two aspects of consciousness are properly balanced. Our feelings do not completely dominate us, neither are we indifferent to the changing experiences that surround us. In abnormal states, however, this balance is no longer preserved."¹² Simple feelings may lie anywhere between pleasantness and unpleasantness and are prominent factors in the more complex states of consciousness known as emotions. As a part of emotional experience arise sensations from changes in various bodily functions, as respiration, circulation, elimination, etc. An emotion that has run its course often passes over into a permanent passive attitude termed a mood. This mood may become the path of least resistance for further emotional upheavals. An in-born tendency similar to the mood in its manifestations is the temperament. Mental hygiene should aim at the development of strong pleasant feeling tones in connection with activities and duties which make for improvement. Williams states¹³, "the essence of psycho-prophylaxis, as of psychotherapy and education, is to associate useful activities with agreeable feeling tones, and to disassociate from useless or injurious acts the agreeable feeling tones that may have been acquired." The activity itself is not of necessity one which gives pleasure to the individual; in fact it may have connected with it strong tones of decidedly unpleasant nature. Thus, certain sorts of work may be irksome and unpleasant at first, but are persisted in because the results are of benefit to the individual, until later the work

itself gives pleasure through the expression of normal self-activity. The cold shower may be approached with premonitory cold shivers, the result of an unpleasant feeling tone derived from previous experience of the momentary shock, but pleasant feeling tones arising through memories of the sense of exhilaration and well-being after the rub-down, assume the dominance and serve to carry the individual through the ordeal with fortitude.

There is a natural tendency for pleasant feeling tones to strongly associate themselves with activities and modes of conduct habitually and repeatedly performed, and for disagreeable feeling tones to lose their potency. Disobedience of parental admonition when first practiced is accompanied by strong emotional disturbance, fear of detection, dread of punishment, remorse, shame, etc. With repetition of the act, however, the emotional accompaniment becomes less troublesome, and the agreeable feeling tone, for the experience of which the act was first undertaken, assumes its place. To reinstate obedience it is necessary to surround the disobedient act with unpleasurable feeling tones. Corporal punishment is but rarely of value; usually doing more harm than good, especially when administered by an angry parent or teacher who unconsciously acknowledges his own insufficiency by resorting to this means the real purpose of which is to act as an outlet for the uncontrolled emotion of the adult. In the child it engenders fear, loss of respect and affection, and a feeling of resentment which may persist into later life, marring for all time the confidential relationship which should exist between parent and child. In most breaches of good behavior deprivation of some pleasure eagerly desired or enforced solitude will be found efficacious. In older boys, constitutionally defective in ethical sense, or whose ethical sense has developed awry by reason of faulty early training, a resort to physical force may sometimes be necessary but never in the form of flogging. Ancient chivalry was founded upon some excellent principles, one of which was the individual's personal responsibility to the injured person or to a self-nominated champion; but always with opportunity for self-defense. A method I have successfully used, is to first explain to the boy that he has been guilty of an act which of necessity affects another person or group of per-

sons and that as he goes through life he will in such situations find there is someone ready to take the part of the injured one. He is then told that he and I will put on boxing gloves and fight until he has been punished sufficiently to impress that fact upon his mind. If the boy has any manhood in him, he puts up the best defense of which he is capable, takes his punishment without complaint, acknowledges his fault and promises to guard against a repetition. If he loses his temper the punishment is made more severe until he comes to realize, that to lose self-control is to add weakness to weakness. Especially at the period of adolescence does respect for physical superiority outweigh precept. This alone, if there were no other reason, is a potent argument for male teachers at this time.

This paper has already assumed such length as to preclude any but brief consideration of two most important phases of mental hygiene, i. e., formal education and sex hygiene. These subjects will be more fully discussed at some future time. In regard to formal education. I merely wish to make the assertion that modern educational measures tend to lose sight of fundamental individual variations in temperament, in ability and in ultimate purpose. There is over-emphasis of stereotyped measures perhaps suitable to the average child, but not to the one varying from the average in physique or in capabilities. Mere memory is made all-important, while the reasoning faculties are largely allowed to lie dormant. The curriculum is over-crowded, the time allowed for wholesome physical and mental rest, too little. Teachers and school authorities have too little knowledge of child hygiene in general, and mental hygiene in particular.

Sex hygiene has become a veritable hysteria of agitation, with a morbid emphasis upon the manifestations of abnormal sexual psychology and venereal disease. The only real interest of many exploiters of sex hygiene is a morbid one, while others, honest in purpose and well meaning, because of celibacy, temperamental incapacity or unreasonable prejudice, have warped and twisted conceptions regarding the sexual impulse.

By the process of projection "prudery detects wrong where no wrong is" and under the guise of intellectuality, sociology or modernism allows thoughts regarding sexual matters to enter consciousness under proper chaperonage, as it were,

permitting frank and open discussion of matters which by all canons of good breeding and good taste would be taboo.

These remarks are not directed against nor are they meant to discourage those who in a truly scientific and humanitarian manner are seeking the truth regarding sexual immorality in the young, but rather against those propagandists who insist upon their instruction in matters the full significance of which is beyond their understanding. I am strongly of the opinion that sexuality in all its forms should remain, in so far as is possible, a closed book to all children until the age of puberty at least, and that even at that period whatever simple instruction is necessary should be given by the parents and by no one else. They should be familiar with the sexual significance of apparently trivial and innocent manifestations, the importance to the individual and to society of a well balanced, even if strong, sexual nature, and should be taught to detect early aberrant impulses and tendencies. Though we may fail to subscribe in their entirety to the views of Freud and others regarding the sexual significance of infantile and childish proclivities, an understanding of the basis of his arguments cannot but lead to an acknowledgment of their force, in some particulars at least. Premature eroticism most often has its origin in causes controllable by the parents and community and proper control would eliminate the need for early formal instruction in such matters.

I have in this paper attempted to show that mental hygiene is not a mere metaphysical abstraction capable of practice only by the chosen few, but that it is capable of reduction to the terms of common every-day life and that in its application every individual and event making up the environment of the child exerts an influence for present and future good or evil.

To suggest that mental hygiene be considered in this broad sense is my excuse for offering to such a gathering as this much that at first thought must appear trivial.

REFERENCES.

1. Ernest Jones, M. D.: *The Treatment of the Neuroses: Modern Treatment of Nervous and Mental Diseases*, 1, 333.
2. S. S. Colvin, Ph. D.: *Education. Modern Treatment of Nervous and Mental Diseases*, 1, 60.
3. L. Pierce Clark, M. D.: *Some Personal Results in Psychoanalysis and the Future of Psychotherapy*. Boston Medical and Surgical Journal, June 11, 1914.
4. Eugenics Laboratory Publications, 1910, iii, X.
5. T. B. Hyslop, M. D.: *The Influence of Parental Alcoholism on the Physique and Ability of the Offspring*. The Lancet, January 14, 1911.

6. Morton Prince, M. D.: Psychotherapeutics. A Symposium, Page 13.
7. J. Madison Taylor: Development and Its Anomalies. McKee and Well's Practical Pediatrics, 11, 998.
8. G. J. Still, M. D.: Common Disorders and Diseases of Children, Page 17.
9. B. Bendix, M. D.: General Prophylaxis in Diseases of Children. Pfandl and Schlossmann. The Diseases of Children, I, 238.
10. George W. Crile, M. D.: The Origin and Nature of the Emotions.
11. Boris Sidis, M. D.: Psychopathology of Neurosis. New
13. Tom. A. Williams, M. D.: Psychoprophylaxis in Children. York Medical Journal, April 24, 1915.
12. Colvin loc. cit. Page 87.
Psychotherapeutics. A Symposium, Page 163.

THE RELATION OF PFROPFHEBEPHRENIA AND DEMENTIA PRAECOX TO CRIME.*

W. J. HICKSON, M. D.

Director Psychopathic Laboratory, Municipal Court of Chicago.
CHICAGO, ILL.

Ever since Kraepelin touched his master-hand to the symptom complex, now generally recognized as dementia praecox, making it more definitely understandable, its psychiatric importance has steadily increased; following him Bleuler was perhaps the next man who made the most important contributions to the subject, carrying it above and beyond all previous treatments by his refined psychological methods.

Bleuler not only had the advantage of having developed the psychological approach to mental diseases to a very high state, but he also had unusual clinical opportunities in the way of a very large amount of appropriate material; Zuerich being for its size one of the most cosmopolitan cities in the world in regard to population, being neutrally situated in the center of so many other nations and being well provided with institutions of all sorts, we find it has been looked upon as a haven for no end of dementia praecox cases, who have flocked there.

Through this psychological method of approach much confusion in regard to dementia praecox has been cleared up. The differential diagnosis between it and other diseases has become much sharper and its own boundaries more clearly defined, so that now Morel, who gave the name to dementia praecox, would hardly recognize his offspring. As a result of this psychological study it was seen that this name was inappropriate and others were suggested; the one suggested by Bleuler based on one of the fundamental conditions of this disease seems more appropriate,

namely, "Die Gruppe der Schizophrenie," or divided mental processes. This group contains at present four subgroups, the classification depending on which of the accessory symptoms predominate, such as simple, hebephrenic, katatonic and paranoid; there is also a tendency, since the psychology of litigious insanity and pure paranoia has become better understood, and that the same fundamental mechanisms may be at work here as in the other forms of dementia praecox, to subsume them under the general rubric of schizophrenia. Bleuler also says this is only a generic classification and not to be regarded as a species, and that there will be other subclassifications eventually worked out.

In eliminating diagnostic confusion by this method we bring in many cases formerly wrongly diagnosed as psychasthenia and hysteria; many times the latter have been only hysteriform accesses on a dementia praecox basis, which latter was unrecognized in the presence of the more outspoken symptoms. But perhaps the most important matter of diagnostic import cleared up by this method was the recognition of a group of cases which are steadily growing larger as the matter becomes better known, where dementia praecox has been grafted on feeble-mindedness and called by the Germans pfropfhebe-*phrenie* (grafted hebephrenia). This method of approach has also opened up new vistas in the matter of the heredity of this psychosis. We have not found one case of the hundreds that have gone through the court where there was not a well defined heredity when evaluated by this method; in other words, we make the claim based on close to a thousand observations that dementia praecox is always hereditary. There also seems to be a great deal of commonness in the hereditary background of both feeble-mindedness and dementia praecox and offers a most interesting problem in the study of heredity. From the clinical side, in a large percentage of these cases, there is nothing very definite on which to establish a diagnosis; while at the same time the disease is of the utmost potentiality in the thinking and doing of the victim; this is sometimes called predementia, or latent dementia praecox, which, as a matter of fact, is not latent at all except in the physical sense. The psychological side may be quite well advanced and highly potential criminally, while yet there are prac-

*Read at meeting of Alienists and Neurologists, Chicago, July 13, 1915.

tically no definite physical or clinical signs; in fact, as a clinical entity dementia praecox in its present advanced development can be hardly said to exist in a large proportion of cases.

Such physical or clinical signs as alterations in superficial, deep, and pupillary reflexes, vasomotor changes, such as blueness, coldness and sweating of hands, and also edema of the feet, alterations in blood pressure and blood count, changes in the urine and other secretions, spinal fluid, etc., and outspoken general mental symptoms are too ill-defined in a large proportion of cases and should, therefore, not be relied upon to make the diagnosis; and it is well known how well cases of dementia praecox paranoides can dissimulate on occasion. By the psychological method we take the diagnosis to the case in the same way that we take the tests these days to the feeble-minded, and not sit by and have to await developments as is the case in many instances diagnosed by the ordinary clinical methods, and these tests are to dementia praecox in the reliability and applicability what the Binet-Simon tests are to the feeble-minded. These psychological signs and symptoms are as clear and definite to the properly trained man as they are unknown or unappreciated by those unfamiliar with the method, just as much, for instance, as the page of shorthand is meaningful to the person understanding it as it is unmeaningful to the one who does not; or the woods is to the woodsman and not to the city-man, though they both observe the same outward appearances.

It will be seen how readily, for instance, that dementia praecox may be overlooked when we realize that practically all feeble-minded institutions are harboring unknowingly large numbers of dementia praecox cases either pure or grafted on feeble-mindedness, on an average, I should say, of from 15 to 25 per cent of the population of many institutions. They make up a large percentage of what are mistakenly called the erethric form of feeble-mindedness in contrast to the phlegmatic form. We also see this ignorance in other fields where dementia praecox is complicated with more outspoken conditions such as hysteriform accesses, alcoholism, etc., and is overlooked.

I do not know of a better place to study the primary and secondary symptoms of dementia praecox than in the unruly wards or cottages,

both male and female, of many feeble-minded institutions. Here you will not only see the characteristic alteration of what little association and affective life these cases possess, but especially the katatonic symptoms manifest themselves most markedly here, such as stupor, lying curled up in corners, on door-steps, and such places, as we usually see them select in asylums for the insane, mutism, stereotypy, mannerisms, negativism, "Befehls' automatism," echopraxia, echolalia, spontaneous automatism, impulsiveness, katalepsy, masked face, "Schnautze," *flexibilitas cerea*, verbigeration, neologismus, hair-pulling and eating, mutilations, etc. We see here also maniacal and katatonic attacks. It is high time that these cases should be recognized for what they are and transferred to insane asylums where they will be treated with understanding and the facilities which asylums are provided with for the care of such cases as compared with feeble-minded institutions in both personnel and therapeutically.

There is no doubt that in making surveys of various institution, courts, etc., for feeble-mindedness, the uninitiated have included cases of dementia praecox, especially those whose diagnostic ability is limited to the Binet-Simon scale. However, in our forthcoming report we hope to put a means into the hands of these workers, which we hope will at least call their attention to many cases of dementia praecox and other psychoses which might otherwise be overlooked and diagnosed as pure feeble-mindedness. This method comes out most clearly with the *pseudoprefhebrenia* cases and shows their mannerisms, stereotypy, dissociation, etc., very distinctly, and consists of a series of drawings by such cases of the Binet-Simon and Ziehen's visual memory tests, which are quite characteristic. When a worker gets a response resembling any of those we shall illustrate he should at once suspend his diagnosis until a psychiatrist sees the case. Of course, the occurrence of double basals and marked scattering is oftentimes present in the psychoses and is also a help as well as other qualitative signs in the Binet-Simon scale.

In all our courts both criminal and civil we are meeting with a large percentage of cases of dementia praecox, which is responsible for their presence there, and as this fact becomes better appreciated it will get the recognition its importance deserves.

In the Boys Court the percentage of dementia praecox in 929 cases was computed and it was found that 145 or 15.6 per cent of this group had dementia praecox. This group of 929 cases was sub-divided as follows:

In the average intelligence group of 95 cases we found 18 or 18.9 per cent had dementia praecox.

In the high grade borderland sociopath group we found out of 133 cases 21 or 15 per cent had dementia praecox.

In the group made up of the high, middle and low grade sociopath, consisting of 101 cases, 11 or 10.8 per cent had dementia praecox.

In the group made up of high, middle and low grade morons, consisting of 789 cases, we found that 94 or 12 per cent had dementia praecox.

In the Boys Court it will be seen, therefore, that in the average intelligence and borderland groups, we have on the average of about 16.9 per cent with dementia praecox. In the remaining feeble-minded group, the sociopath and moron, the percentage averages 11.4 with a total average for all groups of 15.6 per cent. These figures are made up only upon the cases examined by us in the Boys Court, which is only a small percentage of the total number passing through in the course of the year, something like 1/7 or about 14 per cent of the total; but our examinations were made upon a fairly representative group and if these figures hold true, as I feel certain they will with the whole group, we have had something over a thousand cases of dementia praecox, either alone or grafted on feeble-mindedness in the Boys Court. A certain number of these cases were complicated with alcoholism, hysteriform seizures, simulation, etc. Most of the crimes of violence, rape and the like were committed by dementia praecox cases, either pure or grafted on feeble-mindedness.

Our experience in the Morals Court does not show quite so many cases as in the Boys Court, and there are also certain qualitative differences.

In the Domestic Relations Court we are finding a very high percentage of dementia praecox; in a certain percentage of cases uncomplicated, but in the largest percentage complicated with alcoholism, alcoholic delusions of infidelity and other paranoid manifestations, a respectable percentage are cases also of pfpopfhephrenia.

In a group of 342 cases examined from this

court we found 71 or 20 per cent to have dementia praecox; about 25 per cent of these were outspoken alcoholics. These cases were rather selected ones, but nevertheless show what an important role this psychosis is playing in domestic disturbances.

The group from the outlying courts are also more or less selected and consequently somewhat high; for instance in a group of 140 cases from these courts we found 39 or 27 per cent were cases of dementia praecox.

Of course, through all these courts we are finding cases of paresis, manic-depressive insanity, epilepsy and the like, but in insignificant percentages compared with the praecox cases which might almost be regarded the criminal psychosis par excellence if we do not regard feeble-mindedness as a psychosis.

Many of these cases are regarded as feeble-minded in school and our records show that on the whole they do poorly at school. However, it is not uncommon for us to find cases that could only get as far as the fifth or sixth grade show up very high on our intelligence tests.

These cases should be recognized as early as possible, especially the uncomplicated cases, where their symptoms are more or less amenable to treatment, even if their constitution cannot be changed, their treatment in the school being very influential for better or worse on their psychosis.

Professor Bleuler considers the discovery of dementia praecox by Kraepelin to be a greater advance in psychiatry than the discovery of general paralysis, which, in its turn as dementia praecox, is at the present time in many instances concealed and mistaken under many other diagnoses. As this discovery has been important for psychiatry so has it been for criminology, especially by the psychological methods more particularly developed by Bleuler, which allows us to diagnose this condition in many cases where it has been responsible for conflict with the law, but where its presence has not even been suspected. It is, therefore, important that this condition be recognized as well as feeble-mindedness as one of the fruitful causes of conflict with the law, and steps taken to eliminate it.

The pfpopfhephrenia group deserves especial study on account of the deviations resulting in its diagnosis, course and prognosis, and it is my belief that when these conditions are fully evaluated

we will have advanced another milestone in our understanding of the causes of crime, as we did when we found the high correlation between feeble-mindedness and crime; and let us hope it will be in this field, as it is in medicine, that the right diagnosis is half the cure.

THE GENESIS OF CERTAIN PHENOMENA
AS INTERPRETED IN A PSYCHO-
ANALYTICAL STUDY OF A CASE
OF PARANOID DEMENTIA
PRAECOX AND A CASE
OF HYSTERIA.*

MAX A. BAHR, M. D.,

Clinical Psychiatrist, Central Indiana Hospital for Insane.

INDIANAPOLIS, IND.

It is not the object of this paper to present additional evidence as to the value of psychoanalysis but merely to call attention to some of the principles of the Freudian psychology as applied in two cases which have been of special interest to me, and which I have had continually under my observation for many months.

The fundamental principles involved are of such great usefulness in unearthing some of the mysteries of insanity, that it will not go amiss to emphasize at this point the dynamic influence of subconscious desires and also the various actions which are performed without the desire being permitted to enter the conscious life of the individual. There will also be noted throughout the history of this case of dementia praecox, an innate deficiency of the sense of reality, and the difficulty in the separation of reality and phantasy which was the essential factor predisposing this patient to the formation of her delusions. These delusions might be viewed as a wall built about the patient to prevent the warring elements, phantasy and reality, from coming in contact.

There is still another observation which I desire to impress upon you, which has been revealed by Freud as an entirely new arena of unconscious motive with important influence in early life, namely, the role of primitive instincts, and the fact that these do not vanish, but undergo further development. These instincts, continuing to exist in their infantile state, and connected with

the primary attachment of the individual to one of the parents, generally the one of the opposite sex, come into conflict with normal adult consciousness. These early attachments are entirely devoid of the sensual elements of the adult love and constitute merely the tender feelings towards the parents. As maturity is attained, sensual elements come into consciousness, but there is an inability to transfer this so-called tender parental affection, in conjunction with the sensual feelings, to the new individual in the sense of the adult sex interpretation. Where such transference is not possible, the sensual impulses of maturity glide in the direction of the tender feelings of parental affection. This state of affairs being repugnant to the conscious personality, the sexual attachment to the parent of the opposite sex, in the sense of the meaning above described, becomes repressed and relegated to the realm of the unconscious. The psychosis may be said to have arisen from the arrest of the development of the instinctive desires, and consequent faulty adaptation in the sexual sphere.

It must be understood that this does not imply a sexual cause in the sensual sense, but in the sense that the cause is to be found in the imperfect development of instincts, or rather an inability to correlate the infantile tender emotions and the amorous sensations of the adult love, which may be viewed in the light of a difficulty in the proper adjustment to the biological demands of the adult individual.

Case 1. Paranoid dementia praecox; aged 24 years; female; admitted to the Central Indiana Hospital for Insane, December 13, 1914.

Family history: Paternal grandmother neurotic. Father's brother psychotic. Mother was of nervous temperament. Father later in life became addicted to alcohol. One brother died in infancy of some rather obscure condition. Two brothers and six sisters are living. Parents were divorced when patient was eighteen years of age. Patient's conception was unsuspected, as it was thought for some time that the mother had a tumor.

Personal history: Birth of patient normal. She had no diseases during her early life excepting measles and scarlet fever, which attacks were so mild that she was not confined to her bed.

As a child she was considered very bright, and by the time she entered high school, she had been promoted to a class with an older sister. She graduated with honors, and was the youngest member of her class. She took considerable interest in gymnastic

*Read before the meeting of Alienists and Neurologists, Chicago, July 12-16, 1915.

training, and at the time of her graduation was captain of her basket ball team.

Her make-up quantitatively was normal. Qualitatively she was considered by those who knew her intimately as somewhat peculiar. She cared little for social functions and her close friends were very few. Later she took a business course and assisted her father, who was the owner of a large stock farm, and had other financial interests.

Patient always had a very deep admiration for her father, who in his early career was looked upon in his community with great respect and whose opinion in various matters was frequently sought. Later, when the patient was seventeen years of age, he met with business reverses and became addicted to the excessive use of alcohol, for which his wife soon afterwards obtained a divorce.

The patient criticized her mother harshly for what she regarded as a rather hasty and unwarranted action, and although she always had a high regard for her mother, the depth of her affection was always very noticeable towards the father.

The patient's first knowledge of sexual matters was when she was eleven years of age. She heard the matter discussed while in company with some older girls. When she first came to the realization as to how children were brought into the world, she was impressed by it as something vulgar. The patient always possessed great pride and ambition, but after the divorce of her parents she led a life of comparative seclusion. In her rather isolated life upon a farm, she was much given to phantasizing and day-dreaming. Her father had moved to an adjoining state and she missed him greatly, for he had always petted and humored her.

The patient was always a great lover of books of the dramatic order, and also became intensely interested in literature and English history. At the age of fourteen she could recite from memory Sir Walter Scott's "Lady of the Lake," and had read dozens of times the life of Mary Queen of Scots, whom she designated as the "Martyred Queen." The life of the Queen so impressed her that in her phantasy life she would impersonate Mary Stuart, and live over and over again the actual experiences of this beautiful and accomplished individual. She lived through the many misfortunes which may be said to have begun with the queen's birth, the various schemes and intrigues of the courts of Europe, and the great amount of blood that was shed for her hand in marriage. With all pomp and splendor she would go through her first marriage ceremony, and also witnessed the various schemes for her marriage with her second cousin that were based on her nearness of succession to the English Crown. She also lived through the experiences with Rizzio, the Italian Count, who had won the queen's good will and favor, and who alienated her affection from her husband, and was later brutally murdered in the queen's own castle; the murder later of Lord Darnley, and the queen's third marriage to the Earl of Bothwell, and

finally her imprisonment and trial by a court appointed by Queen Elizabeth in which she was condemned and finally executed.

At the age of sixteen the patient had made the acquaintance of a Mr. A., who was two years her senior, with whom she fell deeply in love. She described him as being the type of man she admired; 'that he was handsome, intellectual, gentle, and a man more to be compared with her father than any other she had ever known.' The father highly approved of this man and later gave him some employment, and also rendered him financial aid that he might complete a university course. The attachment of Mr. A. and our patient continued for nearly three years. They became engaged and expected soon to be married, when suddenly and unexpectedly he broke the engagement, and the patient learned a short time later that he married another individual. An older sister greatly approved of this, because she thought it best for reasons of differences of religious belief, the patient being a Presbyterian and Mr. A. a Catholic.

Following this rather sudden breaking off with Mr. A., the patient became an absolute recluse for several weeks, and lived, so to speak, a life of wish-fulfillment in phantasy. Later, at the age of nineteen, she made the acquaintance of a Mr. W., with whom she entered into a rather short association, which was later followed by the development of her psychosis. The mother earnestly encouraged this match with Mr. W., who was about ten years the patient's senior, and a man successful in business. He was a rather coarse type of man, however, and did not possess the characteristics of her first lover, Mr. A. Mr. W. desired very much to marry the patient, and became a most ardent and passionate lover. He talked to her freely on sexual matters, and on several occasions the patient felt that she had compromised herself by permitting him to become rather indiscreet in his conduct towards her, although no actual illicit sexual relations were indulged in. On one occasion she met him clandestinely in a neighboring city, where she remained two days, and after that occasion he became rather repugnant to her, and she discouraged his attentions entirely. Following this occasion she became rather enthusiastic in religious work, which, however, was only of very temporary duration.

At the age of twenty-one, certain manifestations of her psychosis were noticed by the family, which were as follows:

She became rather abnormally depressed with ideas of self-reproach, in which she would blame herself for the most trivial incidents, and which later developed into a feeling of intense hatred against her mother. On one occasion she made a violent assault upon her. This hatred was also expressed against other members of her family and some of her former friends, and especially towards Mr. W., her second lover.

Finally, she imagined that these friends and relatives were against her. People would point their

fingers at her and make remarks about her, and on several occasions a voice spoke out and said, "There she is." At about this time the patient heard a sermon in which the minister used the expression, "the wages of sin is death," which she interpreted as being the prediction of her end. She thought a great deal about this incident, and frequently a feeling of uneasiness and insecurity would come over her. She felt that the whole world now knew of her indiscretion with Mr. W., and that she was to be held as an example before the world as a "bad woman." When the minister made a call at the patient's home to inquire about her, she felt an intense fear come over her and also an impulse to throw herself out of the window, and in order to restrain herself from doing this she locked all the windows in her room. A similar obsession came over her on a subsequent occasion when she was in church, after which time she ceased attending religious services.

Following these ideas of self-reproach, suspicion, and persecution, she rather suddenly manifested delusions of a grandiose character in which she believed that she was the direct descendent of Mary Stuart, and was the rightful heir to the throne of England, and since the outbreak of the present European conflict, she desires to be released in order that she may open up peace negotiations.

Later her delusions became more systematized and greatly intensified. People were making plots and threats against her life. The chief figures in these attempted plots were individuals with whom she had formerly been intimately acquainted, her friends and members of her family. Every movement and act was a distinct plot to take her life. She tasted poison in her food, and finally would not partake of it until she observed its effect upon other members of the family.

An hallucinatory voice would say to her, "Oh, God! can that be my child?" Later she had the delusional idea that James Hill, the president of the Santa Fe Railroad, was her father, and that her real parents were only her foster parents. She believed that James Hill was the descendent of an infant son of Mary Stuart and Count Rizzio, and that it was brought to this country by Sir Walter Raleigh.

Analysis revealed that all the patient's ideas and trends of thought were related by direct association to a conflict which was based primarily upon the fact that her wish to obtain the man whom she desired had not been fulfilled, and that this man, her girlhood lover, was the one for whom she expressed the higher love and reverence, the type of love she bestowed upon her father. This lover after the divorce of her father, in a manner filled his place in the patient's life and became the object of the same infantile affection which was bestowed upon her father, which she later learned was not the type of love repre-

sented to her in the case of her second lover, Mr. W.

After Mr. A., the first lover, passed out of the patient's life, the appearance of Mr. W., with whom she was somewhat indiscreet in her conduct, temporarily re-established a connection with the external world. This association with Mr. W. was decidedly a pathological one, for in this step from her former idealism to the rather crude abnormal relations, she was immediately overcome and thus retreated into her psychosis. Her affair with Mr. W. did not satisfactorily sublimate her type of sexuality, for the very foundation upon which her life was planned fell from under her and she could not adapt herself to the external world and to reality.

Following this affair, there was an attempt at sublimation by an enthusiastic interest in church work, which, however, was only temporary, for she soon afterwards developed ideas of self-reproach and obsessions, and for several weeks drifted into the life of a recluse. It was then that every one looked upon her as a "bad woman," and later the people whom she loved most dearly became her enemies, and wished to poison her and put her out of the way, or as Freud states, "the one who now, on account of his persecution, is hated and feared is the one formerly loved and revered."

The hallucinatory voice, "Oh God! can that be my child?" was heard by the patient the first time when she was on her home farm, near which passed a branch of the Santa Fe Railroad of which James Hill was president at the time. On this occasion she noticed a train stop, and a short time afterwards a number of people were seen to leave the cars, and she observed one man in particular, who seemed to assume an air of authority, and whom she believed to be the president of the road. She did not know his name at that time, but shortly afterwards she saw an article in a St. Louis paper making reference to the Santa Fe Railroad, at which time there also appeared the picture of its president, James Hill. Thus, in consequence of the hallucinatory voice, "Oh God! can that be my child?" associated with the circumstances just stated, the patient believed that James Hill was her father and was descended from Scotch ancestry, and the association of his name with the hills of Scotland, the description

of which had so impressed itself upon her in her youth from the reading of Scott's "Lady of the Lake," became still further evidence to her. These incidents were all links in the chain of evidence to assure the patient and substantiate her belief, that she was a descendent of Mary Stuart, Queen of Scots, and thus through Mr. Hill, as her father, she was able to explain her presence in America at this time. In this manner her mind blended together two concepts, on account of similarity of sound, which otherwise had no relation to one another, namely, Mr. Hill and the hills of Scotland. It is readily understood how, with the delusional idea that the patient was the child of James Hill, her real parents now became only her foster parents. Accompanying this were a host of secondary persecutory delusions.

The change in her religious belief from the Presbyterian to the Catholic faith was made in order to conform with her delusional ideas in regard to Mary Stuart, and also to do a kind of religious penance for her first lover, Mr. A., who was a Catholic. Thus, it can be seen that this was a purely biological adjustment in order to avoid mental conflict and to attain a superficial peace of mind.

It will be noted that the hallucinatory voice, "Oh God! can that be my child?" had reference to a subject closely related to the life of the patient, for it was the voice of Mr. A., her first lover. This was the expression of a desired wish which the mind refused to treat as a part of itself, and which consequently became dissociated from the conscious personality as an auditory hallucination.

It will be further noted that while living the life of a recluse, the various ideas relative to her playing the part of Mary Stuart during her earlier day-dreams, had now, during her psychosis, been elevated by a process of dissociation to the rank of delusions, but modified in so far that she is not now Mary Stuart herself, but the descendant of Mary Stuart and the present rightful heir to the throne of England, in order not to conflict with temporal differences and other contradictory historical facts. Thus, in her psychosis, when her childish propensities to live in a world of dreams conflicted with reality, they continued not as day-dreams as formerly in her early life, but as reality in the form of a psy-

chosis. Thus, she stepped over the bounds of phantasy into a psychosis in which she actually believed what she formerly phantasized, at which time, however, it was still possible to bring herself back to reality.

Throughout, there is noted a conflict between complex and reality, in which, however, conflict is avoided by permitting the complex to obtain expression by the construction of phantasy in which she believes herself the rightful heir to the throne of England, while the incompatibility with the world of reality is masked by the production of the dissociated ideas in the form of delusions of persecution. This dissociation is consequently a biological phenomenon in which the stress of conflict has been avoided and appears to be the only natural means by which conflict could be dealt with.

Thus, conflict appears at least to be the basic factor in the causation of the psychosis in this case. The conflict which has been unearthed and is held responsible for the genesis of the symptoms presented, has, however, not only involved the superficial elements of the mind, but investigation has revealed a conflict of a more fundamental character. This fundamental conflict takes us back to the conflict of the primary sexual instincts, which constitute the great propelling forces of the mind.

Her love for Mr. A. was a higher love, not a sensual love, for it was the type of love which gave her happiness in her first love affair, as it was the very foundation upon which her life was built. When this love was taken from her, her connection with the world was severed, but she later attempted to re-establish this connection, by her second love affair with Mr. W. She viewed the second lover, however, in the light of a man with purely animal instincts and lacking all the finer qualities of the affection possessed by her first lover, which was the type of love which appealed to her innate instincts, and also the type which existed between her and her father. Consequently, her associations with Mr. W. became repugnant, and her intention of marrying him became less and less the more she became acquainted with his type of love, as he represented to her the sensual, adult love which was entirely out of keeping with the patient's primitive instinctive love, such as was represented in her father and later transferred to Mr. A. This

interpreted, really means that the desire for the type of love represented by the parent is so intense that it cannot be put into adult language excepting in the sex terms.

Thus aborted development of the adult love instinct represented one of the essential features of the make-up of this case, and the inefficient development manifested itself in various phenomena expressed in her psychosis, which revealed the underlying instinctive tendency of an infantile characteristic.

This defect in the feeling of reality must be viewed as being innate, and this inability to separate reality and phantasy as predisposing to the development of her delusions.

Her dream symptoms, which I will not here present in detail, could be traced to certain complexes which would not pass censorship. Some of these complexes were recent, others dated back to her childhood, but all were the result of a subconscious mechanism. Consequently, in her psychosis the mind overwhelmed reality and created a phantasy world of its own construction, in whose design a systematized wish-fulfillment involved an entire change in the patient's personality.

It would be interesting to know how the patient, if she had married her first lover, would, in the practice of normal marital relations, have adjusted the clashing of her infantile instinctive tender love with the sensual adult type. Would she finally have found a normal adaptation, or, by the overpowering influence of her love of the infantile level, would she have found refuge by retiring into a psychosis, thus shutting out the world of reality?

The further development of the psychosis presented many of the characteristics of the dementia praecox type, such as the display of numerous mannerisms, incoherence in conduct, indifferent emotional attitude, untidiness, and other evidences of deteriorating mental organization.

The physical and neurological examination were negative.

We have not been able as yet to make any readjustment of her distorted mental status by psychotherapy.

Case 2. Female, aged 44 years; a case of hysteria, admitted Jan. 13, 1913. This patient had hysterical convulsive seizures on an average of two or three

times a week for a period of nearly four years. This case demonstrates most vividly the conversion of psychical antecedent phenomena into bodily symptoms, and also that these psychical phenomena, which were the basis of the convulsions were not accidental and without meaning and did not occur at random, but upon analysis offered themselves to definite logical interpretation, for they were the expression of certain unconscious trends which failed of adequate realization. There will be noticed running through the history of this case a submerged desire on the part of the patient for her first husband, her childhood love, and a disintegration of the elements of her personality, which could not be synthesized on account of her divorce from this husband and a marriage of both herself and this husband to other individuals. There is to be further noted the subsequent complete frustration of the desire by the death of her first husband. The convulsions were the compromise by which the patient's submerged complexes were permitted to enter her conscious personality.

For the sake of brevity I will relate only such parts of the history of this case as have a direct bearing upon the suppressed complexes and the subsequent convulsive attacks.

Family and personal history negative. At the age of fourteen she had her first love affair, when she met a young man through some friends of her mother. This man she always idolized and "he was just the kind of a man I had previously pictured to myself as the kind of a man I would like to marry some day." Although, for two years after acquaintance, she had seen but very little of him, she never enjoyed herself in the company of other young men, as this particular individual was the only one upon whom she cared to bestow attentions. She married him when she was twenty.

She had three children by this husband. The first two were twins. She had one miscarriage, which was brought on by "worry" about her husband, whom she feared would be killed. He was a railroad employee.

Three years after their marriage she was granted a divorce from her husband on the ground of infidelity and non-support. She took legal steps greatly against her wishes, being influenced in this by her parents. "I believe if I had not been so hasty, I believe that Will (her husband) would have come back to me, and I would have gladly forgiven him for having done wrong. This thing has worried me ever since I obtained my divorce." This incident later played a prominent part in her psychosis.

One year after the patient obtained her divorce she married a man twenty-eight years older than herself, after a very short acquaintance. She was then twenty-five and her second husband fifty-three years of age. This marriage, the patient admits, was rather a convenience marriage. She was left with three small children with no support, and the man whom she married had some means and was also receiving a government pension. "I married this man

more for a home and there was no love back of it, such as I had for my first husband." I investigated his character, however, before I married him and I learned that he had supported his first wife well."

After two years of wedded life she had a miscarriage, which did not cause her any concern, as she did not care to have children by her second husband. Her second husband did not appeal to her sexually, and she often felt that these relations with him were really a life of sin (basis for the delusions in her psychosis later).

She always entertained high ideals and was very religious.

About eight years ago, her first husband was killed on the railroad. This was a great shock to her. Some of her friends, who heard of the accident, hesitated to notify her, as they knew of the admiration she still possessed for her first husband.

It was the patient's strong desire to view the corpse, which was permitted, upon the plea that she desired that her fourteen-year-old daughter see her father, whom she had never seen, being only six months old at the time of the divorce of her parents. She admitted that the taking of her daughter was merely a subterfuge to have the opportunity to view the remains of her former husband, and that it was really she who desired to see the remains. She attended the funeral with her daughter and witnessed the burial.

"After the burial I really felt better than at any time after our divorce, because then I had the feeling that it will be impossible for me to ever live with him again and that I could now pass him out of my mind."

A short time after this the patient had a dream in which she was affected with a most loathsome disease—namely, smallpox. Her body was covered with large scabs and ulcers and she was isolated upon a large tract of land. The place where she was isolated and the surrounding conditions were familiar to her as the place she had met her former husband. It was the same locality where they had played as children many years previous. This dream was wish-fulfilling in so far as the surroundings were familiar to both herself and her former husband. It was very likely that he would be there and she would be able to test his affection for her by the effort he would make to attempt to aid her while she was afflicted with such a terrible disease as smallpox.

About six months previous to admission of the patient to our institution in January, 1913, the second husband suddenly left her and only by the aid of the U. S. Pension Bureau at Washington was he finally located at the Dayton Soldiers' Home. After the husband had been located he wrote in reply to a letter from his wife that she had better get a divorce, as he never expected to return. This she refused to do, as it would deprive her of a part of her husband's pension, but at the same time was content to have him remain separated from her.

After the patient's first marriage she lived with her husband in the same house with a Mrs. G. Mrs.

G. had a great deal of domestic trouble with her husband, which later led to a divorce. Our patient had a most friendly interest in Mrs. G. and sympathized with her greatly, and during her trouble she became even more intimately acquainted with her and they are close friends up to the present day. Shortly after Mrs. G.'s husband left her, Mrs. G. began to have convulsions, which were attributed to the husband's desertion and ill-treatment of her. Through the influence of sympathizing friends Mr. G. was induced to return to his wife, as it was thought that by his return her convulsions would cease. Mr. G.'s return was but for a short time, as afterwards they became divorced. Mrs. G. continued to have convulsions for several years afterwards.

After our patient became divorced from her husband, and especially after his death, she adapted herself fairly well to her second conventional marriage.

At the age of 40, at the time of the beginning of her menopause, she began to have much trouble and sorrow. Her favorite daughter (daughter of her first husband), became ill and died. "She was like a flower to me in my life and it was she that brought me through all the trouble I was having at the time of her birth" (which was about the time her husband deserted her). "She always took the place of something which I can't explain since the death of my first husband."

First evidence of mental disturbance occurred shortly after the death of her favorite daughter. She became despondent and lost interest in her household affairs, and the world in general, and led a very secluded life. The loss of her daughter again revived the repressed affection for her first husband, who either in actuality or some symbolized manner, was continually before her mind, although he had already been dead five years. At this time the patient remembered having had a dream in which she was laid in a casket.

The same minister who married her to her first husband delivered a funeral sermon and some of the witnesses of her first wedding were her pallbearers. When the patient awoke from her dream she was rather disappointed because it was not a real experience, as life had no charms for her (dream wish-fulfilling in so far that the same people appeared who had been present at her wedding).

At this time the patient began to blame herself for many trivial incidents, and also developed many self-accusatory delusions. She reproached herself especially for not having returned to her first husband and also for allowing herself to be influenced by her family to become separated from him.

Shortly following this period she developed convulsions, which occurred with no degree of regularity, and which continued at different times over a period of nearly four years. These convulsions also observed in the institution, two weeks after her admission, were typically hysterical in character. "These spells would generally come over me when I was worried, and especially when I thought of my first hus-

band. Also Mrs. G. would come before my mind and I often thought how similar her sorrows were to mine, and that her husband left her as mine did." (Mrs. G. is the woman with whom the patient lived and to whom she formed such an intimate attachment, and who later developed convulsions when she was deserted by her husband.) The patient, although conscious of Mrs. G.'s misfortune and believing it similar in every way to her own, was not conscious of her convulsions being similar to Mrs. G.'s, and this only became clear to her after a psychoanalysis had already been quite well advanced.

When this fact was brought to the realm of consciousness and the point made clear to her that these convulsions were in all probability like those Mrs. G. had, the patient suddenly remarked with considerable emotion, "Why Doctor, those spells are just the kind Mrs. G. had."

As already stated, these convulsions continued until two weeks after her admission to the institution. Just previous to her admission the patient had another severe shock when she received word that a daughter had an illegitimate pregnancy and had been sentenced to a detention home for incorrigibility.

Following this incident it was necessary to confine the patient to an institution, and she was sent to a private sanatorium for three weeks before her admission to the Central Hospital.

For a period of about ten days previous to her admission to the sanatorium, she had a period of complete amnesia, during which she also had an aphonia. When asked later why she did not talk she stated that "it was probably a punishment because I did not go back to my first husband."

Patient on admission presented a picture of anxious depression with numerous delusions of a self-accusatory nature as already mentioned. The special features in her case were her convulsive seizures. She would generally utter a loud cry preceding each attack. This had characterized the attacks when at home, and the cry was so loud at times that her neighbors would rush into her house and offer their assistance.

Following this cry the typical globus hystericus was evident, and particularly the stage of clownism with various contortions, illogical attitudes, and wide ranged movements was most typical. Patient would never injure herself in her fall, and would generally have these attacks when some incident bearing on her home life was brought to her consciousness.

It was evident from the psychonalysis of this case that the convulsions were not of haphazard occurrence. There was a well recognized antecedent psychical event in the form of repressed complexes relative to her first husband which could not find normal expression because of their dissociated mental processes, and were unable to synthesize themselves with the waking consciousness or personality of the patient.

These various submerged impressions which could not find expression through voluntary effort had

necessarily through conventionalism existed in a realm functionally apart from the conscious life of the patient.

In other words, she would never again possess her first husband, which had continually been her innermost desire, because she had been divorced and both had remarried. Afterwards through death his return became still further an impossibility.

As is illustrated in this case, the psychic manifestations are no more a matter of chance than the physical. In both spheres of reaction, mental and physical, the principle of cause and effect is recognized here as operative.

The convulsions were merely symbolic of the submerged desire for the first husband. It was while she was living happily with her first husband that Mrs. G. was having her sorrows, and it was the plea of sympathy which was presented to Mr. G. that temporarily united them again.

Thus it may be noted that this symptom was not merely a chance one, but upon analysis could be logically interpreted, for the patient's convulsions were the expression of an unconscious desire which could not find expression in the field of consciousness. The unconscious wish-fulfillment can also be noted in the patient's dreams.

In the unearthing of these various repressed, unrecognized wishes by degrees through psychoanalysis, the insight into her convulsions became clear to her. These had remained exclusively an inner fact, but now they began to be an external manifestation and were treated as such by the patient. The internal tension began to yield and the symptoms to weaken and when her consciousness accepted these facts, her relations to reality became normal, and her convulsions ceased.

The physical and neurological findings were otherwise normal excepting a slight goiterous enlargement.

Patient has been discharged from the institution and from a recent report has not had a convulsive attack for sixteen months.

WHY THE DELAY IN RECOGNIZING LOCOMOTOR ATAXIA?*

C. F. NEU, M. D.,

INDIANAPOLIS, IND.

Assistant Professor of Nervous and Mental Diseases, Indiana
University School of Medicine.

It may seem presumptuous for one to take up the time and attention of this meeting in merely

*Read at meeting of Alienists and Neurologists, Chicago, July 12, 1915.

trying to lay emphasis upon conditions which are already well known to all of us, and which, too, many of us take for granted, are or should be known by every one aiming to practice medicine, but judging from the frequency with which the early manifestations of locomotor ataxia are attributed to and treated for some entirely different diseased condition, it is evident that more attention should be given to this disease and allied conditions, and greater stress placed upon the importance of the early recognition of such symptoms as are usually found in the early stages. Furthermore, since it is well known that when once the destructive changes in the neurons of the central nervous system have taken place, no form of treatment can restore them, and since the pathological-anatomical changes in this disease are ultimately destructive in character, it is only too evident that the earlier the character of the disease-process is recognized and appropriate treatment administered to interrupt or inhibit the activity of the causative factors, the spirochaete pallida or the toxic products of its activity, the better will be the results of that treatment.

Meeting so frequently with patients complaining of symptoms which point incontrovertibly to the tabetic condition, and who had complained of them for years and yet the probability, often not even the possibility of the disease considered, one naturally seeks for some explanation. Two factors seem to stand out predominantly: One is the statement usually made by the attending physician that knowing the patient so well he did not believe a syphilitic infection possible, so did not suspect it, or where suspected and inquiry made, was given a positive denial either intentionally or from ignorance thereof due to the triviality of the manifestations at the time of infection. The other factor seems to be the fault of us neurologists and alienists in failing to emphasize sufficiently the necessity of always having in mind the possibility of a tabetic process where one meets with manifestations well indicative of it. With the means at our disposal at the present time, there is practically no excuse for failure to recognize the tabetic condition until the process has advanced to that stage where all who run may read. The object of this paper, therefore, is not to add anything new to our knowledge of the disease, but to emphasize the necessity of recogniz-

ing early the character and nature of those conditions which indicate the existence of the tabetic process. In our eagerness and desire to win fame and honor by discovering something new or startling, something heretofore unknown or unthought of, we are too apt to neglect the more important, common, everyday phenomena, at the expense of the patient's health and happiness. It is not the intention to enumerate every manifestation that is met with in the early stages of the disease, nor to discuss in detail individual cases, but a synoptical outline of the early history of a few illustrative cases as ascertained by examination will be given, pointing out the unnecessary delay that occurred, and calling attention to those features which should have directed the attention of the physician to the possibility of a tabetic process, with a notation of the conditions existing at the time of examination.

Case 1. Male, aged fifty years. He gives a history of a possible infection at thirty-five, the physician at that time calling a local penile sore merely a so-called soft chancre. During the last ten to twelve years he has complained of more or less pain in the legs, more about the knees, varying in severity, intermittent in action, dull and aching in character, usually relieved by a course of hot baths or similar treatment. Four years ago following an attack of gonorrhea which became chronic, he suffered from what was called a nervous breakdown which was attributed to the passage of sounds in the course of the treatment. After four to five months he began to notice a difficulty in going up and down stairs; also pain across the arch of the foot and ankles, this being attributed to the condition of falling arch and flat-footedness. During the last two to three years this condition has gradually grown worse. The pains were worse at night and at changes of weather. He became more nervous, was often unable to sleep because of the pains; noticed a loss of sexual power, at times difficulty in controlling the bladder, a numbness in the fingers and hands, less so in the feet; a sense of early fatigue after exercise, of weakness in the knees and stiffness in the feet, and a tendency to stagger when first getting on his feet to walk. Under the influence of alcoholic stimulants the difficulty in gait and the sensory disturbances apparently disappeared temporarily, or at least he became unconscious of their presence.

Examination of this patient disclosed unequal pupils manifesting the Argyll-Robertson phenomenon absent tendon reflexes in both arms and legs; marked Romberg swaying, marked ataxia and inco-ordination in the movements of the arms and legs; a loss of the sense of movement in the toe and ankle joints; a marked delay in the perception of the pinprick, and a more or less general hyperesthesia to heat and cold.

The blood and spinal fluid each gave a four-plus positive Wassermann reaction. This patient during the last three to four years has passed through the hands of several physicians, osteopaths and chiropractors, and even at the time of examination had been referred to a surgeon for advice and treatment in regard to the falling arches, which were regarded as the seat of the trouble. The loss of bladder control and of sexual power was attributed to the indiscriminate use of the urethral sounds. The pains in the feet and legs and the difficulty in walking were attributed to the falling arches, and the general nervousness due to the pain and the disturbance of sleep.

The early pains in this patient were undoubtedly tabetic in origin, since they were not arthritic, had not the character of a peripheral neuritis, were transitory in duration, changeable in character, not associated with any local disturbances, and showed a tendency to be worse at night and during changes of weather. These features taken individually may not mean much, but taken collectively are almost pathognomonic of tabetic pains. It is quite probable that had a proper examination been made when these pains first appeared there would have been found other evidences of the presence of the tabetic process.

Case 2. Male, aged forty-five years. History of luetic infection eleven years ago. Three years ago he began to have attacks of pain in the upper abdominal region, located mostly between the median line, the level of the umbilicus, and the right costal margin. The pains were sudden in onset, spasmodic, griping in character, were associated with nausea and vomiting, were relieved only by opiates, were not followed by any local soreness or tenderness and recurred at first at irregular intervals, but of late they have been more frequent, occurring about every week or ten days. This patient was treated by several physicians for gastric and for gall-bladder disease. He had also consulted several surgeons, who also diagnosed gall-bladder disease, probably calculus, and had advised operation.

At the time of examination there was found the Argyll-Robertson pupil, a slight Romberg swaying, absence of the patellar and Achilles tendon reflexes, anesthesia over the outer side of both legs, retardation of pain and pressure sense in both feet and legs. The abdominal examination was negative or at least doubtful.

From these clinical data the diagnosis of tabetic crisis was made. As this was before the advent of the Wassermann reaction, or before much attention was given to the spinal fluid for luetic states, no data are at hand in this regard.

The family physician disagreed with the diagnosis, and when the surgeon who had referred the patient

for a neurological examination declined to operate he persuaded the patient to submit to an operation, but failed to find any evidence of a surgical pathological process in the abdominal cavity. Also the subsequent history of the patient's illness proved it to be wholly tabetic in origin.

It is not uncommon to meet with cases of locomotor ataxia in which acute pains of this type and character are the first manifestations that lead the patient to seek medical advice, although close interrogation will usually disclose the presence of other disturbances which had existed for a variable length of time, but were not sufficiently prominent to attract much attention or cause much discomfort or distress. When such severe pains are more or less constantly located in one or other of the special organs they constitute the more common form of the so-called tabetic crisis. But it must be borne in mind that pain is not the only way in which such a crisis may manifest itself. The pain may be entirely wanting, and in its place there may appear an uncontrollable vomiting, an unexplainable diarrhea, a profuse polyuria, an ungratifiable erotic sensation, etc., any one of which may be the only prominent manifestation in the earlier stage of the disease.

Case 3. Female, aged forty-five years. Widow of an army officer. Ten years before the time of examination she suffered from an attack of herpes zoster completely encircling the body at the waistline, following which there persisted a feeling of heaviness and of a band-like constriction. About a year later she began to have pains in both heels, sudden in onset, transitory in duration, and stabbing in character. Later these extended up the inner side of the legs. Two years later she began to notice a difficulty in walking, particularly at night, describing it as a feeling or sensation as if on skates, also a numbness in the whole lower extremities.

Various physicians were consulted and she spent several years in various sanitariums, her condition being regarded as a nervous breakdown incident to the approaching menopause.

Examination disclosed unequal pupils, the Argyll-Robertson phenomenon, absent patellar and Achilles tendon reflexes, paresthesia of the lower extremities, a marked Romberg, marked ataxia and incoordination, and the blood gave a four-plus positive Wassermann reaction.

The patient gave a negative history and bitterly resented any suggestion of it being syphilitic in origin after having insisted that she be told definitely and specifically the nature and origin of her trouble. In

this idea that the diseased condition could not possibly be syphilitic in origin she was supported by several physicians who had previously treated her. As a result of this disagreement she discarded medical advice and took up Christian Science for several years, but finding herself gradually growing worse she later accepted the situation more philosophically and decided to secure what relief was possible by appropriate treatment.

It can scarcely be questioned that the bilateral zoster followed by a persisting feeling of heaviness and girdle sensation was a direct result and manifestation of the incipient tabetic process, and it is probable that had a proper examination been made at that time the specific nature of the trouble would have been recognized and all these years would not have elapsed before being placed under proper treatment.

Case 4. Male, aged thirty-one years. History of infection twelve to fifteen years before. Three years ago the left eye turned inward, causing double vision, lasting several days. Eight months ago he began to notice a dimness of vision in the left eye, gradually growing worse, and five months later also involving the right eye. About this time he began to notice some difficulty in walking, especially at night; a tendency to fall and an inability to tell the position of the feet when the eyes were closed.

When the visual disturbance first began he consulted an optometrist, who fitted him with glasses, but receiving no benefit they were changed from time to time. Finally, he consulted an oculist who recognized the nature of the trouble and advised him to consult a neurologist.

Examination disclosed an advanced optic atrophy with practically complete blindness in the left eye and almost complete blindness in the right one; unequal pupils not reacting to light, but reacting to accommodation attempts, marked Romberg swaying; absent tendon reflexes, delayed pain sensation; loss of sense of position and of movement; impaired perception of touch and temperature. Wassermann spinal fluid examinations were not made, as the patient was seen before the advent of the Wassermann reaction.

Paresis or paralysis may occur early, involving either a single muscle or part or all of a functionally associated group of muscles, or involving all or only part of the distribution of a peripheral nerve. These paralyses are usually transient in duration, recovering in a few days, weeks or months, and may be paroxysmal or periodic like the pains (Pitres), assuming an apoplectiform character. There may be a mere sense of fatigue, a fatigue out of all proportion to the amount of

muscular exercise, this often preceding for months the onset of a definite paralysis. Of these paralyses those involving the ocular group of muscles are probably the most frequently affected. Impairment of the pupillary reflex, particularly to light, sometimes also to accommodation, is one of the earlier and most constant findings, the time of disappearance of the pupillary response being very difficult to fix, as it is usually absent by the time examinations are made.

Case 5. Male, aged fifty-two years. Denied syphilitic infection. About a year ago he began to suffer from more or less stomach trouble and was treated for the usual "indigestion." The following winter after the stomach trouble had existed about six months he contracted a severe attack of influenza, following which there developed urinary incontinence which was subject to remissions. Two months later he began to notice a difficulty in walking and a feeling of weakness or giving-way of the knees at times. Examination disclosed the presence of the Argyll-Robertson pupil, absent patellar and Achilles reflexes, incoordinate, ataxic gait, loss of control of the vesical sphincter, a positive Wassermann of the blood and spinal fluid; the latter also containing an excess of protein content and a cell count of about 100 per c.mm.

Disturbance of the bladder control or of the sexual function is not an infrequent early symptom and should always arouse suspicion of a possible lues. Difficulty in expulsion or in retention of the urinary flow, abnormally active erotic sensations, causeless erections and emissions, sterility in females, etc., are some of the more common disturbances of these functions.

It is not necessary to burden you with more illustrations along this line. Those that have been given serve to illustrate one of the most important points it is desired to make; namely, that in practically all cases of locomotor ataxia there is an unnecessary and uncalled-for delay in the recognition of the tabetic or syphilitic nature of the early manifestations. I am satisfied that this is the experience common to all of you, and certainly calls for greater effort on the part of those teaching neurology and psychiatry and those of us who are assuming to be neurologists and alienists, in directing attention to those conditions which should always lead one to be on the lookout for a luetic involvement of the nervous system.

REMEDIES IN THE CRIME SITUATION.*

WM. HEALY, M. D.,

Director, Psychopathic Institute, Juvenile Court.

CHICAGO, ILL.

Why the immense loss entailed in the crime situation should be allowed to go on without the most thorough-going attention by a protective government is not easily understood. Certainly, affairs in competitive business could not be carried on in this shiftless manner. Through our central government we carry on studies of influences destructive of the best results of tilling the soil, and, indeed, conditions preventing success in many other fields receive careful attention. But in the matter of crime, where the loss is not only on account of destructive features, but also through expenditure of vast sums, we are making no considerable effort to do better.

From the basis of our institute work of six years and more in studying the factors of delinquency, we would offer the following considerations:

The law, of course, has been attempting to remedy crime by making codes of delinquencies and applying punishments in various prescribed forms. We all know that to a large extent this scheme is a failure. Very frequently just the same people who are handled under the law, after going through the courts or even after being punished, go out and re-offend. A cursory view of this method is enough to show that the trouble here is that the offered remedies do not deal in the least with causes. No one would expect to improve affairs in business or agriculture or education, if the basic reasons for failure were not attacked. It is perfectly clear, then, that what we first of all need is a vastly better understanding of what is fundamentally involved in the crime situation.

Mere statistics, unless they are based on the deepest factors of delinquent careers, unless they deal with the most vital issues, get us nowhere. We need the most living information concerning why this given man or why given groups or types of men commit crimes. Nor is it at all effective to attempt a classification of such a factor as the delinquent himself by superficial data. The idea that the shapes of heads and length of arms

will tell us the story of criminals has long since died. It is doubtless true, I may say, in passing, that the one great reason why a bureau of criminology has never been established at Washington is that when the authorities have approached this topic they become afraid of one-pointed crankiness and of barren figures.

Remedies that shall be efficient must be based upon the most careful studies of causes—such as have only been carried out in court work for a few years. Some of you may recollect that it was as recently as 1909 that Committee A of the American Institute of Criminal Law and Criminology published a bulletin which was the first detailed recommendation to courts and institutions in this country concerning the study of this subject. Since then facts are being gathered in many centers in this country, but still we may insist that we are only at the beginning of even research. There is going to be no change, however, in valid opinions concerning methods to be pursued. The environment which directly produces the offender's reactions, the biological influences which created him, the abilities and limitations and peculiarities of his mental makeup, and, finally, but not least, the contents of his mental life, which make him so much what he is, all have to be studied.

In order that these studies may be done and done well, the necessity for them must be seen. This still requires, as the American Institute long ago discerned, much more general education upon the subject. Even as it stands now, the medical profession, within the fields of which come so many of the problems concerning delinquency, is hardly alive at all to its own connections and its own powers of helpfulness. Psychologists are beginning to work on the problems, but everywhere it is plain that the union of the two sciences is needed.

Since this is a meeting of medical men, one may cite, by way of illustration, the fact that there is very slight recognition by the profession of such problems directly concerning it as we who are in daily contact with delinquents constantly see. Take, for instance, the border-line cases of psychopaths and constitutional inferiors and epilepsies; there seems to be the most astonishing lack of acquaintance with the social issues which these individuals bring up. They are

*Read at meeting of Alienists and Neurologists, Chicago, July 12, 1915.

called normal in the consulting room; they are discharged from the insane asylums because they can't be labeled as insanities of this or that type, and they go out to commit new depredations from there or from the prison, which unfits them, more than ever, to act as normal, law-abiding citizens. The policeman says they are "off." He knows from their actions. The judge says they must be insane. He knows from their record. But the doctor is only too apt to say that they seem all right because he cannot specifically determine in his office the facts of aberration. So one might discuss other groups which, in spite of having already received some attention, at the hands, particularly, of European medico-psychologists, often are unrecognized in their true import.

The lack of appreciation, then, of the facts is by no means all on the side of the legal profession, where it is often placed.

There is a rapidly growing feeling, fortunately, that there must be a closer union between the work of the scientific investigator and the court. Practically, one may find in all large communities that there is a triple union needed—between the police, the courts, and the scientific student. As a matter of fact, the police themselves are sometimes very keen about the deeper understanding of human problems which they meet. There is no reason why they would not get greater pleasure out of their labors if they had more of this. Many a police officer has come to us with the statement that he thought that a certain case should be better understood. Again here, one thing that stands in the way of the cautious minds of the legal profession accepting the advice of the man of science is that there is fear of the narrow point of view. Too often suggestions are offered which are based only upon a partial oversight of the given situation. The professional man may make a laboratory study of the delinquent, but unless the real world, which acts upon the individual and is, in turn, acted upon by him is taken into account, no fair prognosis can be offered. Indeed, one might go further and state that it is not only knowledge of what is the capacity of this delinquent's mind, but also what is the nature of the thoughts that he has that is going to offer safe grounds for predictions. Commonsense observers have called our atten-

tion to these points, and, no doubt, they are right. One has to know, not only the reacting individual, but also the material to which he has to react, inside or outside of his mind.

Taking the scientific and business-like attitude towards this most important question, the crime situation, will involve application of the following practical measures by way of remedies:

(a). The police, who begin the work of remedy, must have strong support in developing records of all kinds and means of identification that shall be national in scope. Upon identification only can be based much of what every medical man so earnestly desires, namely, follow-up work to see how cases come out in the long run.

(b) Commencing with the immediate offense, and with the offender at the earliest possible age, there should be fundamental studies of causes that shall be directed at the point in issue, viz., the delinquency, and the prospects for the future. This involves studies of personalities and of other, such as environmental, factors.

(c) Closer union of police with courts and probation officers and institutional people and scientific students of offenders. Only through this may be developed understandings and records that shall have permanent value for deductions in the given case and for the social issues at stake.

(d) There must be an interested governmental attitude with a centralized attempt to study the problems in the best way. The Federal Government ought to demonstrate the best methods of remedy and blaze the way for community action.

(e) Training of students to undertake the deeper investigation of cases.

(f) Extension of the juvenile court system of prolonged studies, of conference and oversight and curative work for the delinquent himself, extension of this procedure during all the years that young people are still unstable adolescents, still children in self-control, still juveniles in the real meaning of the word. The idea that boys at 17 and girls at 18 are adults must have been founded on a bad guess. Certainly, nothing in psychology teaches it, and the law based on it leaves delinquents without authoritative, rational guidance during the periods when it is notorious that they are morally most unstable.

(g) Development of plans for change of en-

vironmental conditions, often where institution care is unnecessary. No one who is not a practical observer knows the utter waste and folly of release to old bad conditions, whether from the court or from an institution.

(h) Straightforward, rapid treatment of the case by methods that demonstrate the dignity and fairness of the law. (I am not the least in sympathy with doing away with legal discipline and punishment).

(i) The creation of colonies and other institutions that shall economically relieve society of the enormous expense of individuals preying upon it who cannot make their way by honest means or keep out of trouble. (Do we not know the immense cost of even single careers)?

(j) The application of scientific methods of study in institutions for offenders—so that there shall be proper segregation and less intra-mural harm done to the inmates, so that questions of pardon and parole may be based upon the predictabilities which really may be made by medico-psychologists.

(k) The utter breaking up of centers of vice and crime, where anti-social life is directly and indirectly fostered. Laws carried out which make it hard upon contributors to delinquency will do much towards this desired result.

(l) The treatment of the many quite normal criminals by deep-going methods that will make the only paying proposition their refraining from misdoing.

(m) The brain-cell poisonings, particularly of alcohol, that have such great relationship to crime form one of the big considerations. Without the suppression of this there is little hope of going on fully with remedies.

I would suggest that police and court and penal procedures, if they are brought at all under this régime of clearly considering their task of doing always the best for society and for the individual will tend to be purged of their flagrant shortcomings.

The problem, first and last, is one for practical measures based on studies of individuals, physical and mental, and of the influences affecting these individuals. Medical men must, in this field, go to work and play a part that is worthy of the profession.

THE VALUE OF ENVIRONMENT.*

OCCUPATION AND ABSENCE OF RESTRAINTS AND HARSH TREATMENT IN THE CARE OF THE INSANE.

H. P. SIGHTS, M. D.,
Western State Hospital,
HOPKINSVILLE, KY.

This subject is a broad one, and comprises most all that is best in the general management of the State hospitals. However, it must be admitted that it would be an error to separate the methods for discussion.

The absolute frankness intended in the treatment of this subject, together with the limitations of 18 years' experience with the history of Kentucky Institutions for the Insane, offers nothing new and startling. Intending only to support and encourage the position taken by some leading workers in several states in America and Canada; seeking by a true statement of experience, and demonstrated methods, to encourage the adoption of the greatest principles governing State Institutions.

True history and bare facts, unless clothed in the brightest colors of exaggeration, lose a certain amount of interest to some; to others they do not. The latter class I hope to interest, in the broad field of psychological work.

It might also be said that 9 years actual experience in State institution work is a short period to speak with authority on a subject that has interested some of the leading men of Europe and America, during the last 100 years. Yet I shall take a courageous stand for all that this paper implies.

In establishing in your mind a confidence necessary to accept the statement of results and benefits derived from proper environments and non-restraints, I shall only refer to a little history of the development, resulting from the great work done in Utica State Hospital, in the management of the insane, where nearly all restraints have been abandoned for 50 years.

Pinel 50 years before, struck the shackles from the unfortunate sick minded, bringing them from the dungeons to padded cells, giving them sunlight instead of hopeless darkness. This period of 100 years of progressive evolution in the treat-

*Read at meeting of Alienists and Neurologists, Chicago, July 12, 1915.

ment of this unfortunate class, should enable men to take another step higher in the humane methods of caring for and curing the insane.

It is a pleasure to contemplate the work done by the compeers and successors of Pinel, as they went each to his native country and practiced the methods learned of him. Also, those who were inspired by Dr. Gray's advanced methods 50 years ago, have been a blessing to every state in our country.

Thus, waves of progress and advancement in the treatment of the insane, have spread all over the world, carrying with them the blessing of mental restoration to the curable and comfort to the incurable; unless it was when the blighting hand of politics subsidized by its heartless influence by giving control to incompetent political grafters. May God help every state whose institutions are in the hands of the politician!

I am sure the men in the profession who love the work can see the progress and read with pleasure the report of the National Committee, showing that a majority of the states have had the good sense to take the institutions out of politics, protecting their unfortunate sick-minded from the great octopus.

Lately, I was interested in reviewing the reports from the various State institutions, and was impressed with the lack of space used by a majority of the superintendents, in treating of the care and management of their patients. I do not mean this as a criticism, but it shows a lack of interest and enthusiasm in the treatment. Looking towards the restoration of the patients and this subject of getting away from all forms of restraints and punishment, substituting kindness for harshness is as essential, and more so from a humane standpoint, than any form of medical treatment.

It is as essential now to abandon the straight jacket as it was for Pinel to strike the shackles from the wrists of the violent, a hundred years ago. It is as incumbent upon the alienists of today, to furnish proper environment, occupation, kind treatment and diversions, to cure the sick minded, as it is for the surgeon to remove the appendix or the carcinomatous growth. Bodily restraints may never have to be practiced. Let the nurse at all times understand that his or her conduct will determine the uselessness of it.

Most violent excitement in a patient may be subdued by mild, soothing language and deportment, supported by a kindly manner; whereas, a moderate excitement, if met by sternness, harshness of language, threats of punishment, in anger, may be raised to the highest degree of fury.

Therefore, kindness is the basis of the proper management of the insane, and no question as to its efficiency, with intelligent nurses. Obedience is a necessity in the management, I admit, for they who do not obey voluntarily must be made to by firmness and kindly manner. If not they govern and no benefit is derived.

Environment is the greatest element to subdue, content, protect and gratify the insane, as well as helpful to restore. It should be applied with as much care as discipline. Well-appointed wards, cheerful and soft, soothing colors on painted walls, quiet quarters, a general atmosphere of kindness, nothing harsh in color or light to irritate the eye. Allow every stimulation of the mind to be a quieting one. A clean, sanitary room, music, games, picture shows properly censored, and baseball for men—the latter has proven the most beneficial of all amusements with us.

The gymnastic exercise in ward, fifteen minutes every day, prevents the asylum stoop, that is humiliating to some and depressing to all. It is well known that the pride stimulated is beneficial. The erect stature is a pride even to the insane. Special interest should be taken as to proper dining of patients. A well appointed dining room is a help with the discipline at the table.

Above all a clean bed and a sanitary room. The straw mattress with thick pad, laundered regularly, is essential to a perfectly sanitary bed.

Reading books and magazines are found to be a great help. Many times I have said to a violent, and disturbed patient "What book would you like to read? We have a library and tell me what you would like to read." They at once give me their attention and ask for their favorite books.

Everything that makes a patient think well of himself is a benefit; a kind word or act may show results days later.

I shall ask indulgence for a brief reference to the history of the work in the State Institutions of Kentucky. There are three for the care and treatment of the insane and one for the feeble-minded, under a Board of Control, composed of

four members, non-political, appointed by the Governor and confirmed by the Senate.

Before this Board was established, ten years ago, I am compelled to admit every State institution used the Utica crib, straight jackets, lodges and wristlets with belts.

Seven and one-half years ago a determination was made by the Governor and the Board to abolish restraints, if possible. A resolution was passed requiring every restraint to be reported and the necessity for such restraint stated. All forms of restraints were destroyed and these reports were made every month. By increasing the number of nurses and training them it was found that they were not necessary and a greatly improved condition soon followed, resulting in the greatest blessing that ever came to the mentally afflicted in Kentucky.

The amount of attention bestowed upon the subject of non-restraints in Kentucky institutions, differs from corresponding institutions in other states. A wider and more comprehensive display in operative control of patients, by personal management and kindness, persistently kept up is the greatest asset today in the merits of these institutions. Six years the Biennial Reports of the Western State Hospital show only one suicide; a man who had had outside privileges for over twelve years, and never amused himself by any vocation or crafts, nor was he given any daily task to employ his time. This occurred five years ago.

It is unfortunate that many State institutions are allowed to be crowded with feeble persons, advanced in years, who could be kept at home or in suitable alms-houses. They are an encumbrance to the modern hospital and depress the active and acute insane, obstructing the rational treatment by their presence.

Occupation is an important treatment in many mild forms of insanity and chronic cases. To employ the centers of the mind in an absorbing task, greatly benefits the disordered brain, giving rest to the overworked complexes, allowing them to adjust themselves in Nature's way. A pleasing task produces enthusiasm, which is to some, mental life.

These ideals must be reached by wise laws, eliminating the stigma of politics, the greatest curse to the progress of the State institutions.

The great importance of such legislation deserves more public attention than is given it. In the forty-eight states there are half the number that have different laws.

The broad field of the profession in America and Europe applied to the insane, is filled with laborers endeavoring to restore the alienated mind and to render the condition of those persons for whom such restoration is impossible, as comfortable as circumstances will permit.

I contend for the complete abolition of all restraints, in the acute violent insane. They can not be reached by kindness while humiliated.

The day will come whose glory will fill the hearts of the people of every state, when their institutions are governed by kindness and total absence of harshness and restraint.

Communities will welcome back good citizens. Homes darkened by despair will be happy again. The unhappy wife or husband will be filled with joy and the increased number of men and women from whose mind the cloud of insanity has been lifted, will be restored to a life of usefulness and good citizenship.

THE PREVALENCE OF SYPHILIS IN A PENAL INSTITUTION.*

WITH AN ADDITION SHOWING ITS RELATION IN CREATING THE UNCONSCIOUS MIND.

O. M. KRAMER, M. D.,

Chief Physician of the Ohio State Penitentiary.

COLUMBUS, OHIO.

More than one-fifth of the inmate population in the Ohio Penitentiary show positive evidence of syphilis. This population, garnered not only from Ohio, but from every state in the Union, may well be taken as indicative of like conditions in other penal institutions throughout the country. While we need no "Damaged Goods" to awaken us to the horror of syphilis, we in Ohio—one of the greatest states in the Union—are combating this ravenous disease, not only along scientific lines, but along humane lines as well.

Permit me, gentlemen, to pay fitting tribute to the Buckeye State, by saying that we have written into our statute books some of the best laws ever enacted for the general welfare, moral, men-

*Read at meeting of Alienists and Neurologists, Chicago, July 12, 1915.

tal and physical uplift of our charitable and correctional institutions. Long ago the Augean stables of inefficiency and neglect were cleaned out, and a progressive policy dedicated to the philosophy of conserving was substituted.

Every State institution in Ohio is under the direct control of a bi-partisan Board of four members. This Board appoints all managing officers, who in turn appoint their subordinate executive officers, all of which tends to make of us, one great harmonious family, working for the betterment of the twenty-four thousand mental defectives, crippled, delinquent and criminals, in our care.

To further increase the standard of efficiency in the care of the State's wards, the Ohio Board of Administration, which is the central governing board, has established a Juvenile Bureau of Research for mental defectives, of which Dr. J. H. Haines is the clinical director. Not only does this bureau probe the mental condition of the State's wards, but it goes further and endeavors to find the first basic cause of the patient's mental condition—this, for the purpose of effecting a possible cure. One of the first steps this bureau takes is to ascertain if the patient has syphilis, it being held that syphilis very frequently causes mental defectiveness—in many instances breaking out after two or three generations.

Recently we, in the Ohio Penitentiary, of which I am Chief Physician, decided to establish our own Bureau of Research, devoted exclusively to the penitentiary population, with myself as its clinical director, and while this bureau is somewhat in its infant stages, we hope to accomplish a great work, by giving those whom we believe mentally defective, the Binet and other tests. With courteous and kindly assistance of Dr. Haines, we are progressing nicely.

To successfully inaugurate our own bureau, we found it necessary to submit each and every inmate to a very exhaustive medical examination, and, as we all know, this necessitates a deep probe for the purpose of discovering syphilis. To get at this successfully I have called upon my friend, Dr. Walter McKay, assistant physician at the Ohio Institution for the Feeble-minded. Blood was drawn under proper aseptic conditions from the arm of the inmate subject—sometimes as many

as one hundred a day—and specimens sent to Dr. McKay who made "Wassermanns." Up to the present time we have completed tests on 1583 inmate subjects, with the following results:

On July 1, 1915, we had 1900 inmates in the Ohio penitentiary. Of this number 475 or 25 per cent. are foreign-born; 475 or 25 per cent. are colored, and the remainder American-born and from forty-two states in the Union. Out of the 1900 inmate patients, 1583 were examined and a Wassermann made in each case, and we found that 288 or 18.1 per cent. were positive as follows:

18 were XXXX

35 were XXX

149 were XX

86 were X, and of the 288 who were found positive, only 43 or 14.9 per cent. gave a clinical history, although there is no doubt that in many cases erroneous histories were given.

Of the foreign-born population 50 or 11.1 per cent. showed positive.

Of the colored population, 58 or 13.4 per cent. were positive, and 108 or 20.9 per cent. of the American-born population were positive. I am particularly impressed with the small percentage of the colored population that showed syphilis, the natural deduction being that this class would show it in larger degree.

Relative to the treatment that we use. The most aggravated cases—those who show a lesion—where it is dangerous for them to associate with other inmates, are segregated in an isolated ward, while others are permitted to remain in their respective companies. In the worst cases we use neo-salvarsan together with mercury and iodides, while in those cases not isolated we use just mercury and iodides with very gratifying results.

How these statistics compare with those of other such institutions I am unable to say, having no available data at hand for comparison. I believe, however, that the Ohio penitentiary is the first penal institution to go into this work as exhaustively as we have gone with it, and we fully expect to be amply compensated therefor by the knowledge that we have done some good in the cause of humanity.

This bureau of our own expects to take up and consider the mental condition of each of the 288 inmate patients afflicted with syphilis, and upon

the result of this further examination, together with such other tests as may be deemed necessary, to find out whether or not they are fit subjects to be turned loose in the community. If we find that they are not so fitted, we will transfer them to other State institutions for further treatment, and there they will be retained until such time as they demonstrate that they are mentally equipped to take their places in the social order of things.

If we can achieve a fair measure of success along these lines, and back in Ohio we believe we can, we shall feel that we have done a little better than simply discharging our duties.

ADDITION.

Let me here digress a little and devote my remarks to what I term the "sub-conscious" mind of the penitentiary inmate, not only as noted in Ohio, but as I believe, in all states. What causes the inmate to develop many ailments almost as soon as he enters the grim portals of the prison? This is a question, and one of great interest to me because of its peculiar mental phases. I have examined hundreds upon hundreds of incoming prisoners, and have been told by them that they have never been ill. Their heart action is splendid. Their physical condition robust and full of animal strength. Yet, within 48 hours after they have registered, they appear on sick call.

After devoting considerable thought to this subject, I am strongly inclined to the belief that it is the "unconscious" mind that works upon these men. They are suddenly transferred from the seething maelstrom of every day life with its myriad of pleasures, excitements and struggles, into the quietude and well-regulated life of a penitentiary. A void is thus created. The seething tempest of "outside" life must be filled by another mental space. What is it? Brooding, the sight of cramped and crowded men, the melancholia of a cell—this and the fact that the energies are temporarily tied up, is, I believe, responsible for the "unconscious" mind that imagines a dozen varieties of ailments. Strange to say, if they are not sick in reality, they soon become so. This, however, wears out after a few months when the "conscious" mind asserts itself, and the inmate becomes normal again.

In conclusion, I wish to say that what measure of success is achieved by my work in Ohio, is due in a large sense to the cheerful and hearty co-operation of the Ohio Board of Administration and the splendid management of one of the foremost prison administrators in America, Warden Preston E. Thomas.

Gentlemen, I thank you for your indulgence.

INHERITED SYPHILIS IN FEEBLE-MINDEDNESS.*

W. H. McKAY, M. D.,

Resident Physician and Serologist Institution for Feeble Minded.

COLUMBUS, OHIO.

In the past few years the attention of the public has been particularly directed toward the mental defective; and various direct and contributing causes of feeble-mindedness have been considered, among these being syphilis.

While the topic assigned us is "Inherited Syphilis in Feeble-mindedness," we have found it impossible to separate the congenital syphilis, as we prefer to call it, from the acquired, with any degree of accuracy.

The data here presented must necessarily be serological findings, as few parents will admit a syphilitic history, and are usually ready with a supposed cause for their child's defective condition. In a search covering 5909 records in the Institution for Feeble-minded at Columbus, Ohio, only 22 cases gave a history of parental syphilis.

The serious nature of the disease; the far-reaching results that it is known to produce, such as miscarriage and deaths in infancy, which we find to be generally high in feeble-minded strains; the fact that it can be transmitted from mother to child, since the spirochete can pass through the chorion cells; the fact of its close association with immorality, which condition is known to be very prevalent among the feeble-minded; all these tend to indicate that it is an infection which may be legitimately considered in connection with mental defectiveness.

This paper does not hope to establish syphilis as a cause, but only to present our findings together with those of other investigators.

The results of different workers show a great

*Read at meeting of Alienists and Neurologists, Chicago, July 17, 1915.

variation in the percentages of syphilis found in the feeble-minded. Thus (quoting from Tredgold) in France, Raviart and others obtained a positive reaction in 30 per cent. of all cases examined. In Germany, positive reactions were reported by Kroeber in 21 per cent., Kellner and others in but 3.7 per cent., and Thomson and others in only 1.5 per cent. In England, Dean reported positive 5.4 per cent., Thomas 4.8 per cent., and Gordan 16.5 per cent; while in America, Atwood reported positive 15 per cent. of his cases.

Various factors may influence the percentages found by the different observers. For instance, in institutions which receive a large part of their patients from communities which have active juvenile courts and philanthropic bodies, will be found quite a number of the higher grade of aments. Among these are many attractive looking moron girls who practice prostitution. Certainly some of these become infected with syphilis, but it is often difficult to get a history in these cases; and, unless symptoms of the disease are present, error may creep in. Or, the variations in the application of the Wassermann technique may contribute toward differences in results. Again, a small series of cases might contain a large proportion of Mongolians, hydrocephalics, and paralytics, and the percentages of positive reactions would be liable to rise in proportion.

Our observations have been made in two series of cases. The first, covering 1,050 cases, was worked out by Dr. W. C. Stoner of Cleveland, Ohio, serologist, and Dr. F. L. Keiser, resident physician at the Ohio Institution for Feeble-minded. The second series of 500 cases was observed by Dr. F. L. Keiser and myself. This gives us a complete series of 1,550 unselected cases, all taken from the Institution for Feeble-minded at Columbus.

The technique used in the first series was the original Wassermann technique with an antioxo amboceptor; and that used in the second was the method described by Captain Craig, of the U. S. Army Medical Corps. His method was described in Surgeon General's Bulletin No. 3. In this we used the sheepblood amboceptor and corpuscles instead of the human system. The method used in reading the reaction was that described by Dr. W. T. Mefford of Chicago, wherein he grades

the strongest positive reaction four plus, and the weakest positive reaction one plus.

We found 134, or 8.6 per cent., positive in our series of 1,550 cases covering all grades of amentia. In two of these cases we were able to get a history of syphilitic infection in the patient. This leaves 132, or 8.5 per cent., supposedly congenital syphilis. Of these in only three cases were we able to get a history of previous syphilis in the parents. In the other 129 cases we found a positive Wassermann with no history of syphilis.

The patients tested ranged in age from 6 to 61 years. The youngest positive showing was 7 years, and the oldest was 61. This oldest patient to give a positive reaction was an idiot, whose mental age the Binet-Simon test showed to be two years.

In three instances, two or more from one family were given the Wassermann. In the first instance, the older and duller of two children gave a negative reaction, while the younger and brighter gave a positive. In the second instance the older brother was positive, and the younger was negative. Shortly after the test was taken this younger boy died of tuberculosis. In the third instance three brothers were tested, and all were positive.

The cases classified clinically were divided as follows:

Type	No. tested	No. positive	Percentage
Mongolian	38	8	21.0
Cretin	7	0	0
Microcephalic	26	3	11.5
Macrocephalic	16	3	18.74
Paralytic	41	10	24.39
Idio Savant	1	0	0
Blind	7	0	0
Deaf	13	1	7.6

The relatively high percentages in the paralytic and Mongolian groups suggest a possible relation between syphilis and these types. In view of this it may be well to note the results of other observers. In a recent work by Dr. Gordon of England, it is shown that while out of 400 general cases of amentia examined only 16.5 per cent. were positive, the percentage giving positive reactions among those suffering from some form of paralysis was 31.4 per cent. The work of Atwood of the Rockefeller Institute, gives similar results. He finds that of 204 low grade idiots tested, only 14.5 per cent. were positive; but that in the case of 47 diplegics, 23 per cent. gave positive findings. Our results show 24.39 per cent. positive.

The most recent work on Mongolian idiocy and syphilis was published by Dr. H. C. Stevens of Chicago. He reports the blood of 20 Mongolians tested, with 2 cases or 10 per cent. positive. In our series 38 were tested; and 8, or 21 per cent., were positive. On the other hand, Dr. Gordon tested 8 cases of Mongolian idiocy with the Wassermann reaction, with a negative result in every case.

The findings so far do not warrant us in drawing any definite conclusions regarding the relation of syphilis to feeble-mindedness. They do, however, indicate a need for more work along this line, especially with regard to the Mongolian, paralytic and macrocephalic groups.

MENTAL EXAMINATION OF DELIN- QUENT BOYS AND GIRLS.*

THOMAS H. HAINES, M. D., Ph. D.
COLUMBUS, OHIO.

Examinations herein reported covered the cases of five hundred and seventy-four boys at the Boys' Industrial School, and three hundred and six girls at the Girls' Industrial Home, in Ohio, which constitute, for the most part, the admissions at the Boys' Industrial School from July 1, 1914, to February 28, 1915, and at the Girls' Industrial Home from July 1, 1914 to June 30, 1915. Only such cases are omitted as were inaccessible, either from sickness, discharge, or escape.

In the routine examinations of these minor delinquents, both a Year scale and a Point scale for the measuring of intelligence were used. The Point scale is that of Yerkes and Bridges. Two Year scales were used. In the early part of the work, the Goddard revision of the Binet scale of 1911 was used. Later, a new scale, compiled with suggestions from Terman and Pintner, was used. This was adopted because of manifest errors in placing given tests in the Binet scale as used by Goddard, and because that scale entirely fails to make any valuable differentiations in mental ability above twelve years. As eighty per cent of these minors are above twelve years in chronological age, and more than twenty-five per cent test at and above fifteen years, it is

imperative that we have some means of measuring intelligence differences above twelve years.

Miss Hardwick's construction of data from Goddard's examination of fourteen hundred children at and under twelve years of age (see page forty of "A Point Scale for Measuring Mental Ability"—Yerkes, Bridges & Hardwick), shows that the percentages testing at age are about fifty in only two out of the eight year groups from fifteen to twelve, inclusive. The median point is above age for three years, and below for two years. Above twelve years no claim has ever been made for accuracy of measurements for the Binet scale.

The Point scale recommends itself primarily because of its self-perfecting character. The more measurements of intelligence which are averaged in, the greater is the reliability of these averages as norms. This does not involve replacing tests up and down a scale, but simply recognizes that new averages for children or adolescents of a given age and class constitute better standards than those made from smaller numbers of examinations. The apparatus thus constantly perfects itself just as Sargent's anthropometric charts, and it provides the only possible standard for measurement of mental processes.

The Point scale is further recommended by the fact that it measures definite mental processes in all persons examined. This claim can not be made for any Year scale extant. The Point scale also affords a ready means of comparing one sex, or age, or social or industrial group of children with another. Binet himself recognized the impossibility of setting the same standard for different classes of children in Paris. Yerkes and his co-workers have established the fact of difference in norms in children from families where English is spoken, and those in the same school from families where English is not spoken. They, likewise, establish the differences in norms for boys and girls.

The Yerkes-Bridges norms used herein are those obtained by averaging the results of four hundred and sixty-eight children of English speaking parents in a grammar school in Cambridge, Mass.

Years—	4	5	6	7	8	9	10	11	12	13	14	15
Points	17	22	29	35	41	56	62	65	77	79	81	82
No. tested . . .	3	28	55	48	47	43	53	55	40	43	37	16

Table 1. Giving Yerkes-Bridges averages for chronological ages from four to fifteen years, and also the numbers of children whose results are averaged to form these tentative norms.

*Contributed from the Bureau of Juvenile Research, Columbus, Ohio.

*Read at meeting of Alienists and Neurologists, Chicago, July, 1915.

TABLE 2

Yr. 10	11	12	13	14	15	16	17	18	19
39 7.6	59 9.0	36 7.2	45 8.4	38 9.2	36 7.6	38 6.8	35 7.4	47 8.0	47 8.6
-----	-----	-----	50 9.0	40 7.8	38 7.9	38 8.0	47 8.4	47 8.8	54 9.3
.....	.....	.....	58 9.4	44 9.4	38 8.8	40 6.8	49 9.2	52 9.2	58 9.7
-----	-----	-----	65 10.4	45 8.0	45 9.6	41 8.9	50 8.8	55 9.7	-----
-----	-----	-----	73 11.0	47 7.8	48 8.0	46 8.8	50 9.0	55 9.9	.....
-----	-----	-----	59 9.8	48 9.0	48 9.2	48 9.1	50 9.2	56 9.3	.....
-----	-----	-----	80 11.2	51 8.3	49 9.8	49 8.4	51 8.6	58 9.6	.....
-----	-----	-----	60 9.4	52 8.8	50 8.4	50 9.6	54 9.1	58 9.7	.....
-----	-----	-----	61 9.4	54 9.2	50 9.7	51 9.0	55 9.7	59 9.8	.....
-----	-----	-----	.....	55 9.4	53 9.6	54 9.4	57 8.8	65 11.2	.....
-----	-----	-----	64 12.0	56 9.6	55 9.5	56 10.2	57 9.8	-----	.....
-----	-----	-----	65 11.6	56 10.0	56 9.5	60 10.4	58 9.6	66 11.0	.....
-----	-----	-----	71 11.3	58 10.8	56 10.8	61 9.5	58 10.3	67 10.6	.....
-----	-----	-----	76 10.6	59 9.4	57 9.5	61 10.0	59 9.2	67 12.0	.....
-----	-----	-----	-----	60 10.6	57 9.8	61 10.4	61 10.0	68 11.2	.....
-----	-----	-----	82 12.0+	58 10.4	62 9.5	62 9.5	62 9.6	68 11.4	.....
-----	-----	-----	84 12.0+	61 9.0	60 9.8	62 9.9	62 9.6	70 11.2	.....
-----	-----	-----	61 11.0	60 10.5	60 10.5	62 10.7	63 9.2	-----	.....
-----	-----	-----	61 11.1	60 9.7	60 9.7	-----	64 9.8	71 10.2	.....
-----	-----	-----	63 11.0	61 10.0	61 10.0	63 10.1	64 10.0	71 11.8	.....
-----	-----	-----	.....	61 10.2	61 10.2	63 10.6	64 11.5	73 11.5	.....
-----	-----	-----	67 9.6	61 10.6	61 10.6	64 10.8	-----	79 13.4	.....
-----	-----	-----	67 10.8	-----	64 12.8	65 10.6	80 11.8	81 12.0+	.....
-----	-----	-----	68 10.5	62 9.4	65 11.0	66 9.8	81 12.0+	83 12.0+	.....
-----	-----	-----	68 11.0	62 10.1	65 12.2	66 11.2	83 12.0+	85 13.4	.....
-----	-----	-----	68 11.3	63 9.8	66 11.0	66 11.2	85 13.4	86 12.0	.....
-----	-----	-----	70 11.4	63 10.1	-----	67 10.0	86 12.0	87 12.0	.....
-----	-----	-----	72 9.8	63 10.2	68 10.2	67 11.0	-----	89 14.6	.....
-----	-----	-----	72 11.0	63 10.8	68 10.8	68 10.2	90 12.0	90 14.8	.....
-----	-----	-----	72 12.8	63 10.8	68 11.0	68 12.2	92 12.8	-----	.....
-----	-----	-----	74 10.6	64 10.2	69 10.0	-----	-----	-----	.....
-----	-----	-----	74 11.0	64 11.2	69 10.6	69 11.0	89 14.6	90 12.0	.....
-----	-----	-----	75 10.8	65 9.6	71 11.2	71 11.0	90 12.0	90 14.8	.....
-----	-----	-----	75 11.2	65 10.2	72 11.0	71 11.4	92 12.8	-----	.....
-----	-----	-----	77 11.6	65 11.2	72 11.5	73 11.2	-----	-----	.....
-----	-----	-----	78 11.2	-----	73 11.1	75 11.5	-----	-----	.....
-----	-----	-----	79 12.2	66 10.7	73 12.1	75 11.6	-----	-----	.....
-----	-----	-----	79 12.8	67 11.2	74 10.8	75 12.1	-----	-----	.....
-----	-----	-----	80 11.5	69 10.2	74 11.4	76 10.8	-----	-----	.....
-----	-----	-----	-----	69 10.4	74 11.4	76 11.6	-----	-----	.....
-----	-----	-----	83 12.8	69 10.8	74 12.4	77 11.6	-----	-----	.....
-----	-----	-----	83 14.0	70 11.1	76 11.2	77 11.7	-----	-----	.....
-----	-----	-----	84 12.0+	70 12.4	76 12.0	77 12.0	-----	-----	.....
-----	-----	-----	86 12.0+	73 11.1	77 12.0	78 11.8	-----	-----	.....
-----	-----	-----	-----	73 11.2	77 12.0+	78 12.2	-----	-----	.....
-----	-----	-----	-----	73 11.5	77 12.1	80 11.8	-----	-----	.....
-----	-----	-----	-----	73 11.6	77 12.6	80 12.0	-----	-----	.....
-----	-----	-----	-----	73 11.7	78 11.7	80 12.6	-----	-----	.....
-----	-----	-----	-----	73 12.0	78 11.8	80 12.6	-----	-----	.....
-----	-----	-----	-----	73 12.0	79 11.4	81 11.3	-----	-----	.....
-----	-----	-----	-----	74 12.0	79 11.4	81 12.0	-----	-----	.....
-----	-----	-----	-----	74 11.9	79 12.0	81 12.0+	-----	-----	.....
-----	-----	-----	-----	75 10.8	79 14.0	81 12.0+	-----	-----	.....
-----	-----	-----	-----	76 12.0+	80 11.3	83 12.0+	-----	-----	.....
-----	-----	-----	-----	77 11.1	80 11.8	83 14.4	-----	-----	.....
-----	-----	-----	-----	77 11.7	80 12.0	84 12.1	-----	-----	.....
-----	-----	-----	-----	77 12.0	80 12.0+	85 14.0	-----	-----	.....
-----	-----	-----	-----	77 12.4	81 11.1	86 12.0+	-----	-----	.....
-----	-----	-----	-----	78 11.0	81 13.4	86 12.0+	-----	-----	.....
-----	-----	-----	-----	80 12.8	82 11.8	87 13.8	-----	-----	.....
-----	-----	-----	-----	80 13.2	82 12.0	-----	-----	-----	.....
-----	-----	-----	-----	81 11.5	82 12.0+	88 13.6	-----	-----	.....
-----	-----	-----	-----	81 12.2	82 12.0+	88 14.0	-----	-----	.....
-----	-----	-----	-----	81 12.0+	83 11.8	90 11.0	-----	-----	.....
-----	-----	-----	-----	-----	-----	90 11.4	-----	-----	.....
-----	-----	-----	-----	82 12.4	84 11.2	94 12.0+	-----	-----	.....
-----	-----	-----	-----	83 12.4	84 11.7	97 15.2	-----	-----	.....
-----	-----	-----	-----	83 13.8	85 11.7	-----	-----	-----	.....
-----	-----	-----	-----	84 12.6	85 12.0+	-----	-----	-----	.....
-----	-----	-----	-----	87 12.0	85 12.0+	-----	-----	-----	.....
-----	-----	-----	-----	88 12.0+	85 13.8	-----	-----	-----	.....
-----	-----	-----	-----	88 12.0+	86 16.0+	-----	-----	-----	.....
-----	-----	-----	-----	88 12.8	87 12.0+	-----	-----	-----	.....
-----	-----	-----	-----	89 14.6	87 12.0+	-----	-----	-----	.....
-----	-----	-----	-----	95 14.6	90 12.0+	-----	-----	-----	.....
-----	-----	-----	-----	-----	90 13.2	-----	-----	-----	.....
-----	-----	-----	-----	-----	91 12.0+	-----	-----	-----	.....
-----	-----	-----	-----	-----	94 14.0+	-----	-----	-----	.....

TABLE 2. Point scale scores of three hundred and six delinquent girls arranged in columns by years of chronological age. Opposite each point scale score is the year scale score of the same individual. The figures below the line ----- are scores at or above the norm for the given age. Line divides scores 20 per cent or less lower than the norm from those yet poorer. Line - - - - divides scores 25 per cent or less lower than the norm from those yet poorer.

TABLE 3

Yr. 10	11	12	13	14	15	16	17	18	19
48 8.0	35 7.6	42 8.6	32 7.5	31 7.6	32 8.0	32 8.5	50 9.8	39 8.8	63 10.8
. . .	38 8.2	45 8.7	40 7.4	41 8.0	35 7.8	33 6.6	51 8.6	41 9.0	68 10.8
51 9.7	44 8.1	48 9.6	42 8.6	41 8.8	36 7.8	46 8.4	51 9.2	56 9.4	. . .
53 10.0	44 8.4	51 9.8	42 9.5	41 9.0	41 8.6	46 9.6	51 9.8	56 9.6	78 11.7
54 9.4	44 9.2	55 10.0	43 7.6	42 8.4	45 9.2	47 9.0	52 9.9	56 9.6	-----
56 9.8	49 9.0	56 9.2	44 8.4	45 9.4	46 9.5	51 9.4	52 10.0	57 9.7	
59 9.2	50 9.2	57 10.4	46 8.2	46 8.7	48 9.4	51 9.9	53 10.8	58 10.0	
-----	51 8.6	-----	47 8.8	46 9.1	49 9.4	52 9.1	54 9.2	59 9.4	
69 10.8	-----	58 9.8	48 9.8	47 9.6	53 9.4	53 8.4	54 9.5	61 10.2	
70 10.6	54 9.0	58 10.0	49 9.0	48 9.6	53 9.4	53 9.4	54 10.1	62 9.6	
	55 10.1	58 10.0	51 9.4	49 9.4	54 8.9	53 9.6	55 8.4	62 10.0	
	56 9.0	60 9.8	51 9.8	49 10.0	54 9.0	58 10.0	55 9.2	64 9.2	
	56 10.0	60 10.2	52 8.8	51 9.6	54 9.2	59 10.6	55 9.3	. . .	
	58 10.1	61 10.8	53 9.8	51 9.8	54 9.4	60 9.6	55 10.0	67 11.0	
	60 10.3	. . .	54 8.6	52 9.2	54 10.3	60 10.4	56 9.8	68 10.4	
	61 10.2	62 10.0	54 10.0	53 9.6	55 8.5	61 10.3	56 9.9	68 10.4	
	61 10.5	63 9.6	54 10.2	53 9.8	55 9.0	62 9.3	56 10.6	68 10.6	
	62 10.5	63 10.1	59 9.6	55 9.0	55 9.2	62 9.4	57 9.3	68 10.8	
-----	63 10.4	59 10.1	59 10.1	55 10.1	55 9.9	62 10.2	57 9.4	68 10.9	
65 10.4	65 9.6	59 10.2	59 10.2	56 9.6	56 10.0	62 10.2	57 9.6	68 11.1	
65 10.5	65 11.0	59 10.3	59 10.3	57 9.4	57 9.2	62 10.4	58 9.7	69 10.6	
66 10.7	66 10.2	-----	-----	57 9.5	57 9.6	. . .	58 9.7	69 11.0	
67 9.8	67 10.5	61 9.4	61 9.4	58 9.2	57 9.6	63 9.5	58 9.8	70 11.0	
71 10.7	67 11.0	61 10.1	61 10.1	58 9.6	58 10.0	63 10.0	58 10.4	70 11.4	
73 10.6	71 10.4	63 9.6	63 9.6	59 10.0	59 10.4	63 10.2	58 10.9	. . .	
74 10.7	71 11.2	. . .	. . .	60 9.4	59 10.6	63 10.6	59 11.0	71 10.7	
	71 11.4	64 10.7	64 10.7	60 9.9	59 10.7	63 10.7	62 10.0	71 10.8	
	72 10.8	64 10.7	60 10.6	60 9.8	60 9.8	63 10.9	62 10.4	72 10.7	
	76 10.2	66 10.1	-----	60 10.3	64 10.6	64 10.6	62 10.8	72 11.4	
	76 11.7	68 10.7	61 10.4	60 10.8	64 10.6	65 10.0	63 10.1	74 11.2	
	-----	68 10.8	61 10.8	61 9.8	65 11.2	65 11.2	63 11.0	75 11.2	
	77 10.6	69 10.4	62 9.8	61 9.8	65 11.2	64 9.6	64 9.6	75 11.3	
		70 10.7	62 10.0	61 10.0	65 11.2	64 10.2	64 10.2	75 11.7	
		70 11.0	62 10.0	61 10.2	66 10.2	64 10.4	64 10.6	77 11.6	
		70 11.0	63 9.8	-----	66 10.9	64 10.6	64 10.6	77 12.0+	
		72 10.8	64 10.6	62 10.0	67 10.5	64 10.6	64 10.6	78 11.2	
		73 11.3	. . .	62 10.0	67 11.2	64 10.6	64 10.7	78 11.6	
		73 11.5	65 10.7	62 10.4	. . .	64 10.7	64 10.9	79 11.5	
		73 11.6	66 9.8	63 9.7	68 10.4	-----	-----	82 11.0	
		74 11.2	66 9.8	63 9.9	68 10.6	65 10.6	65 10.6	82 11.5	
		75 11.0	66 11.3	63 10.0	68 10.5	66 9.6	66 9.6	82 11.8	
		75 11.6	67 10.2	63 10.2	68 10.9	66 9.6	66 9.6	83 11.0	
		78 11.5	67 10.4	63 10.9	69 10.2	66 10.4	66 10.4	83 12.0+	
		-----	67 10.4	64 9.2	69 10.3	67 9.8	67 9.8	85 11.2	
		79 11.6	68 9.8	64 10.1	69 10.4	67 9.8	67 9.8	85 11.7	
		86 11.7	68 10.2	64 10.4	69 10.8	67 9.8	67 9.8	85 12.0	
		93 12.0+	68 10.4	65 10.0	70 10.3	67 10.5	67 10.5	86 11.6	
			69 11.2	65 10.0	70 10.6	68 9.7	68 9.7	86 12.0	
			70 10.4	. . .	70 10.7	68 10.4	68 10.4	-----	
			70 10.8	66 9.8	70 11.0	68 10.4	68 10.4	88 11.8	
			70 11.4	66 10.0	71 9.8	69 10.4	69 10.4	88 12.0+	
			71 10.2	66 10.4	71 10.4	69 10.9	69 10.9	89 11.8	
			71 11.0	66 10.4	71 10.4	69 11.1	69 11.1	90 12.0+	
			72 10.6	66 10.4	71 10.6	69 11.7	69 11.7	90 12.0+	
			73 11.2	66 10.8	72 10.8	70 10.5	70 10.5	90 12.0+	
			74 11.0	67 10.6	72 11.0	70 11.2	70 11.2	92 12.0	
			74 11.2	68 10.4	72 11.0	70 11.2	70 11.2	92 12.0+	
			76 10.4	68 10.4	72 11.7	70 11.7	70 11.7	93 12.0+	
			76 10.6	68 10.4	73 11.0	71 10.7	71 10.7	94 12.0+	
			76 11.1	68 10.6	73 11.0	71 11.0	71 11.0	97 12.0+	
			77 11.7	68 10.6	73 11.6	71 11.4	71 11.4	97 12.0+	
			77 12.0	69 9.7	74 10.4	72 10.4	72 10.4	-----	
			78 11.4	69 10.1	74 10.6	72 11.0	72 11.0	88 12.0+	
			79 11.2	69 10.7	74 10.6	72 11.0	72 11.0	89 11.8	
			79 11.2	69 11.0	74 11.2	72 11.2	72 11.2	90 12.0+	
			80 10.8	69 11.1	75 11.2	72 11.6	72 11.6	90 12.0+	
			80 11.4	71 9.8	75 11.5	73 11.6	73 11.6	90 12.0+	
		-----	-----	71 10.8	75 12.0	74 11.1	74 11.1	92 12.0	
		82 11.4	72 10.2	72 10.2	76 11.0	75 11.0	75 11.0	92 12.0+	
		83 11.2	72 10.6	72 10.6	77 11.7	76 10.4	76 10.4	93 12.0+	
		83 11.2	72 11.0	72 11.0	78 11.2	76 11.1	76 11.1	94 12.0+	
		83 11.6	73 10.9	73 10.9	78 11.8	76 11.4	76 11.4	97 12.0+	
		83 11.6	73 11.0	73 11.0	79 10.6	76 11.6	76 11.6	-----	
		85 11.9	73 11.1	73 11.1	79 10.6	76 11.6	76 11.6	88 12.0+	
		87 11.4	73 11.2	73 11.2	79 12.0	76 11.6	76 11.6	89 11.8	
		88 12.0+	73 11.5	73 11.5	79 12.0	76 11.6	76 11.6	90 12.0+	
		93 12.0+	74 11.6	80 11.4	80 11.4	76 11.7	76 11.7	90 12.0+	
			75 10.6	80 11.6	80 11.6	76 11.7	76 11.7	92 12.0	
			75 11.0	81 11.2	81 11.2	77 11.5	77 11.5	92 12.0+	
			76 11.2	81 11.2	81 11.2	77 11.6	77 11.6	93 12.0+	
			76 11.6	81 11.4	81 11.4	77 11.7	77 11.7	94 12.0+	
			76 11.7	81 11.6	81 11.6	78 10.8	78 10.8	97 12.0+	
			77 11.2	82 11.6	82 11.6	78 11.2	78 11.2	-----	
			77 11.2	82 11.7	82 11.7	78 11.6	78 11.6	88 12.0+	
			77 11.4	83 11.0	83 11.0	79 10.9	79 10.9	89 11.8	
			78 11.2	83 11.6	83 11.6	79 11.0	79 11.0	90 12.0+	
			78 11.6	83 12.0	83 12.0	79 11.2	79 11.2	90 12.0+	
			79 10.8	83 12.0	83 12.0	79 11.4	79 11.4	92 12.0	
			79 10.8	83 12.0+	83 12.0+	79 11.4	79 11.4	92 12.0+	
			79 11.2	-----	-----	79 11.6	79 11.6	-----	
			79 11.4	84 11.4	84 11.4	80 11.6	80 11.6	-----	
			79 11.6	84 12.0+	84 12.0+	80 11.6	80 11.6	-----	
			80 11.4	84 12.0+	84 12.0+	80 11.9	80 11.9	-----	
			80 11.4	85 11.4	85 11.4	81 11.4	81 11.4	-----	
			80 11.6	85 12.0	85 12.0	82 11.0	82 11.0	-----	
			80 12.0	85 12.4	85 12.4	82 11.4	82 11.4	-----	
				86 11.4	86 11.4			-----	

THREE 3—Continued.

15	16	17
81 11.0	86 11.8	82 11.8
81 11.4	87 12.0	82 11.9
81 11.4	87 12.0+	82 12.0
81 11.4	89 12.0	82 12.0+
81 11.7	90 12.0	83 11.9
-----	90 12.0+	83 12.0
82 11.2	91 12.0	84 11.4
82 11.6		84 11.6+
82 11.9		84 12.0+
82 12.0		85 12.0
83 11.2		85 12.0
83 12.0		85 12.0+
84 11.5		-----
84 12.0+		86 11.4
84 12.0+		88 11.8
87 11.6		88 11.9
88 11.6		89 12.0+
88 12.0		90 12.0
88 12.0+		90 12.0+
88 12.0+		90 12.0+
89 11.4		91 12.0
89 11.6		91 12.0+
94 12.0+		93 11.6

TABLE 3.—Point scale scores of five hundred and seventy-four delinquent boys, arranged in columns by years of chronological age. Opposite each point scale score is the year scale score of the same individual. The figures below the line ----- are scores at or above the norm for the given age. Line divides scores 20 per cent. or less lower than the norm from those yet poorer. Line ----- divides scores 25 per cent. or less lower than the norm from those yet lower.

The norm for fifteen-year olds may be expected to change with the collection of more data. As will be observed, only sixteen fifteen-year olds were examined to obtain the average in Table 1, whereas, the average group is above forty.

As more than half of the juvenile delinquents reported upon in this paper are above fifteen years of age, it has been necessary to adopt provisionally, norms for later adolescent years. For this, we have used the data furnished in a table given on page ninety of "A Point Scale for Measuring Mental Ability" (Yerkes, Bridges & Hardwick), wherein are set forth the results, test by test, of the examinations of twenty-five factory operatives, ranging in chronological ages from seventeen to twenty-seven years, and scoring individually from seventy-nine to one hundred points each. The average of the total scores for the twenty-five operatives is 88.3. Two seventeen-year olds made eighty-six points each. Another seventeen-year old made ninety-seven points. There is evidently very little development of such mental processes as are measured by this scale, after the age of sixteen years. We have, perhaps, been too liberal in allowing eighty-four points as the norm for sixteen years; eighty-six points for seventeen years; and eighty-eight points for eighteen years and beyond. Yerkes suggests ninety as about what a sixteen-year old should be expected to score, and says this is practically an adult attainment.

The examinations, upon which reports are

made herein, were made by Miss Emily Marie Dietz, Miss Alida C. Bowler, and the writer. In Tables 2 and 3 we present in detail for the three hundred and six girls and the five hundred and seventy-four boys, under chronological age, and in the order of the Point scale scores, (1) the Point scale scores, and (2) the Year scale scores for the same individuals. This arrangement of the data affords the readiest means of comparing the efficiency of the two methods of examination. The horizontal lines across each column mark off from the bottom upward, first, those scores which are at or above the norm for the age in question; second, those which are twenty per cent. or less below the norm; third, those which are more than twenty per cent. and twenty-five per cent. or less, below the norm—that is, between twenty and twenty-five per cent. below the norm; and fourth, those which are more than twenty-five per cent. below the norm—that is, taking any column in either of these tables, and beginning at the bottom, we find four groups of point scale scores as designated above.

	Total No.	1 No.* Pct.*	2 No.† Pct.†	3 No.‡ Pct.‡	4 No.§ Pct.§
Girls.....	306	40 13.1	129 42.4	39 12.8	96 31.6
Boys.....	574	76 13.2	260 45.3	68 11.8	170 29.6
Totals.....	880	116	389	107	266

Table 4. Shows the distribution of boys and girls, by number of subjects, and by percents., into four groups, as rated by the Point scale for measuring mental ability.

* (1) Those attaining the Yerkes-Bridges norm or better.
† (2) Those next lower, including those 20 per cent. below normal attainment.
‡ (3) Those next lower, including those 25 per cent. below normal attainment.
§ (4) Those more than 25 per cent. below normal attainment.

In Table 4 the summary data concerning these groups are set out. It is seen that of the total number of girls examined, forty, or 13.1 per cent. score at or above the norms for their ages, and of the total number of boys examined, one hundred and seventy, or 29.6 per cent. of the whole number are more than twenty-five per cent. below the normal attainments for boys of their respective ages. It is thus seen that we have about thirty per cent. of boys and girls more than twenty-five per cent. below normal attainment, and concerning whom there is little reason to question feeble-mindedness. About twelve per cent. of both groups are seriously retarded and must be called subnormal. Over forty per cent., about forty-three, are below the norms for their ages, and yet, less than twenty per cent. below the normal. Concerning a large

number of these there must be serious question of the integrity of intelligence, and some must be classed as dull normals, while others are so close to the normal attainment that they are allowed to pass for normal.

At the ages of thirteen, fourteen, and fifteen years, there is afforded the best means of comparing our data with the Yerkes-Bridges results. In a group of twenty thirteen-year old boys, Yerkes found no boy more than twenty per cent. below the average for his age group, and the lowest score was seventy-one points. Of our forty-one boys at thirteen years (see Table 3) twenty-four are twenty per cent. or more below the Yerkes norm, and the lowest score is thirty-two points.

Among twenty-three thirteen-year old girls, Yerkes found two scoring twenty per cent. or more below the average of seventy-nine for the group, and the lowest score was thirty-eight points. Of our fourteen girls of thirteen years (see Table 2) eight were twenty per cent. or more below the Yerkes norm, and the lowest score was forty-five points.

In a group of twenty-three fourteen-year old boys, Yerkes found two who scored twenty per cent. or more below the average, and the lowest of the group scored sixty-one. Of our seventy-four fourteen-year old boys, thirty-five scored twenty per cent. or more below the Yerkes norm, and the lowest scored thirty-one points.

Among fourteen fourteen-year old girls, Yerkes found one scoring twenty per cent. or more below the average for the group. She scored fifty-four points. Of our forty-one fourteen-year old girls, nineteen, about fifty per cent. scored twenty per cent. or more below the Yerkes norm, and the lowest score was thirty-eight points. This is the normal score for a child seven and one-half years of age.

Age—	10	11	12	13	14	15	16	17	18	19
Number girls.....	1	0	1	8	19	34	25	29	16	3
Per cent. girls.....	..	..	..	57	46	47	33	45	51	..
Number boys.....	1	8	13	24	35	47	36	49	23	2
Per cent. boys.....	..	33	45	54	47	41	35	42	40	..

Table 5. Shows the numbers and percentages in each year group of boys and girls scoring 20 per cent. or more below the Yerkes-Bridges average attainment for the group.

Table 5 distributes the boys and girls of the different chronological age groups by actual numbers and percentages of those scoring twenty per cent. or more below the Yerkes-Bridges average attainment for the group. One hundred and thirty-five of the three hundred and six girls

examined, or forty-five per cent., score twenty per cent. or more below the averages attained by normal children; and two hundred and thirty-eight of the five hundred and seventy-four boys examined, or forty-one per cent. of the total number score twenty per cent. below the averages attained by normal children.

The heaviest incidence of mental retardation in these groups of delinquents appears at thirteen years of age, for both girls and boys. The numbers of thirteen-year olds are not large, but the advance in percentages over other ages tabulated is striking, and is probably not wholly unrelated to the phenomena of puberty.

By the methods of presentation of data adopted in Tables 2 and 3, it is unnecessary to insert the *co-efficient of mental ability* for individual cases. By the Point scale the *co-efficient of mental ability* corresponds to the statement of retardation in years and months by a Year scale. This co-efficient is simply the quotient obtained by dividing the points of credit attained by a given individual by the points of credit normal to a person of the same chronological age. Thus, for the lowest scoring fifteen-year old girl of Table 2, who makes thirty-six points, the co-efficient of mental ability is 0.44, obtained by dividing thirty-six by eighty-two. This girl's mentality is forty-four hundredths of the normal fifteen-year old. This co-efficient of mental ability affords a more ready and accurate means of comparing individual attainments than does the customary statement of years and months of mental retardation. It also enables the examiner to obviate a measure of unfairness to early adolescents, which results from the customary statement of mental status in years and months. Dr. Kuhlmann¹ has emphasized this unfairness. The rate of development of intelligence from twelve years onwards, for example, being so slow, as compared with the rate from seven to eleven years, it is manifestly unfair to consider a fifteen year old, who passes only a twelve-year test, as in any sense equivalent in his retardation to a ten-year old, who passes only a seven-year test. Years and months are manifestly quite unsuitable standards by which to state the mental status of the adolescent.

The co-efficient of mental ability as above ex-

1. See Journal of the American Institute of Criminal Law and Criminology, January, 1915, page 666, "The Mental Examination of Reformatory Cases," F. Kuhlmann.

plained and illustrated, is bound to take the place of former cruder instruments. In Tables 2 and 3 the co-efficient of mental ability passes the one hundred mark in each column at the lowest horizontal line. It passes 0.80 at the next horizontal line above. It passes 0.75 at the upper horizontal line in each column.

Binet Age	P. S. Age Higher by						At Age	P. S. Age Lower by			
	2.8 yrs. or more	2.3 to 2.7 yrs.	1.8 to 2.2 yrs.	1.3 to 1.7 yrs.	0.8 to 1.2 yrs.	0.3 to 0.7 yrs.	P. S. Age within 0.2 year of Binet Age	0.3 to 0.7 yrs.	0.8 to 1.3 yrs.	1.3 to 1.7 yrs.	1.8 to 2.2 yrs.
7	0	0	0	0	0	1	1	0	0	0	0
8	0	0	0	0	0	2	7	5	2	2	0
9	0	0	0	0	2	2	13	30	10	0	0
10	0	0	0	21	36	18	23	33	30	9	0
11	23	7	12	9	30	67	28	7	7	3	1
12	46	1	4	6	7	13	15	1	0	0	0

Table 6. Exhibits the distribution of the Point scale ratings of five hundred and forty boys in relation to the Binet ratings of the same individuals by half-year periods.

Binet Age	P. S. Age Higher by						At Age	P. S. Age Lower by			
	2.8 yrs. or more	2.3 to 2.7 yrs.	1.8 to 2.2 yrs.	1.3 to 1.7 yrs.	0.8 to 1.2 yrs.	0.3 to 0.7 yrs.	P. S. Age within 0.2 year of Binet Age	0.3 to 0.7 yrs.	0.8 to 1.3 yrs.	1.3 to 1.7 yrs.	1.8 to 2.2 yrs.
7	0	0	0	0	0	0	1	0	0	0	0
8	0	0	0	0	0	4	2	0	0	0	0
9	0	0	0	0	2	2	3	11	1	2	0
10	0	0	1	3	4	3	8	9	6	0	0
11	3	2	3	2	1	16	8	3	2	1	0
12	9	1	1	3	1	6	5	1	1	0	1

Table 7. Exhibits the distribution of the Point scale ratings of one hundred and thirty-two girls in relation to the Binet ratings of the same individuals by half-year periods.

Year Scale Age	P. S. Age Higher by						At Age	P. S. Age Lower by			
	2.8 yrs. or more	2.3 to 2.7 yrs.	1.8 to 2.2 yrs.	1.3 to 1.7 yrs.	0.8 to 1.2 yrs.	0.3 to 0.7 yrs.	P. S. Age within 0.2 year of Year Scale Age	0.3 to 0.7 yrs.	0.8 to 1.3 yrs.	1.3 to 1.7 yrs.	1.8 to 2.2 yrs.
7	0	0	0	0	1	0	0	3	0	0	0
8	0	0	0	0	0	1	4	2	0	0	0
9	0	0	0	0	0	4	4	1	1	0	0
10	0	0	0	3	5	5	12	4	1	1	0
11	1	0	0	1	1	11	2	3	4	1	1
12	0	1	1	1	1	3	6	2	4	2	0
13	6	1	0	1	3	3	1	1	0	0	1
14	1	0	0	2	0	0	0	0	1	0	0
15	8	1	0	0	1	0	0	0	0	0	0

Table 8. Exhibits the distribution of Point scale ratings of one hundred and forty-three girls in relation to the ratings of the same persons by the revised Year scale of the Bureau of Juvenile Research. Distribution by half-year periods.

In charting results in Tables, 6, 7, and 8, no account was taken of Binet measures stated as 12.0+. Reference to Tables 2 and 3 shows many such records. The work of standardization of tests for mental development above twelve years by the Binet-Simon scale has been too trivial to

warrant serious attention for the "fifteen-year old" and "adult" tests.

Point scale age, for comparison with Binet age, was taken in nearest tenths of years. Thus, a Point scale score of fifty-eight points is considered equivalent to 9.3 years. In Table 1, fifty-six is the norm for nine years, and sixty-two for ten years. Fifty-eight is then equivalent to ten years plus two-sixths of the time to the next year, or nine and one-third years.

In Table 6 only 19.5 per cent. of the boys test by Point scale at or within two-tenths of a year of the Binet age. Fifty-eight per cent. test higher, and twenty-six per cent. lower, by Point scale than by Binet. The chief interest in these tables is in the skewing of the curves for the different years. The median position of Point scale estimates for nine years (Boys' Tables) is one-half year *lower* than the Binet estimate. For ten years the distribution of one hundred and seventy cases is about equal on the two sides of the "at age" group. "At age" is the median position for ten years. For eleven years the median position is one-half year *higher*. This means the Point scale estimates these boys who test nine years, Binet, to be a little younger; and those estimated at eleven by Binet, the Point scale rates higher. Boys estimated ten years, Binet, are more nearly *at* Binet age by Point scale rating. Twelve-year olds by Binet are in large numbers estimated very much *higher* by the Point scale. The same statements hold for the girls as exhibited in Table 7.

Compare these tables with Miss Hardwick's exhibition of Goddard's data.² Her table shows the numbers of children supposedly normal, (Vineland school children), who actually tested by Binet tests *at*, *above* and *below* age. Our data show how children and adolescents, both normal and abnormal, tested and rated by Binet tests, range themselves *at*, *above*, and *below* Binet ratings when tested by the Point scale. Supposing, for the moment, the Point scale is a means of testing the validity of the Binet scale, we find the same verdict rendered in regard to the accuracy of the Binet scale as is rendered by the examination of normal children. In Miss Hardwick's table nine-year olds are advanced, or over-rated by the Binet scale. The Point scale shows the

2. "A Point Scale for Measuring Mental Ability." Yerkes, Bridges & Hardwick, page 40.

Binet ratings of normals at nine years are too high. The Point scale rates them lower. The Binet ratings of ten-year old normals and abnormals correspond well with years and with Point scale ratings. The normal eleven-year old and the twelve-year olds are underrated by the Binet tests. Likewise, normals and subnormals testing eleven and twelve years, Binet, are rated higher by Point scale. Such a correspondence between the facts with normal children, and the results of tentatively validating the Binet ratings by the Point scale ratings with normals and subnormals, tends to re-enforce the already loud calls for re-standardizing,—rearranging the Binet tests. At the same time, these results show the closer correlation of the Point scale, with the facts of mental development. The Point scale is a more psychological procedure. It is already bringing out facts in the examination of delinquents of more value for their mental rating and for diagnostic purposes.

For practical purposes, the statement of mental status has been made in each one of these reformatory cases, whether of normal or sub-normal intelligence, and, if judged feeble-minded, whether an imbecile, or low, medium, or high grade moron. In the present state of our knowledge of the norms for the Point scale, it is desirable to have also the Binet ratings of the delinquents. But the Point scale has proved a very useful confirmation and corrective of the Binet findings in cases of mental defect. For adolescents of mentality above twelve years, it has afforded the only means of differentiation of mental attainments. The Point scale bids fair to entirely do away with the use of any sort of year scale. It will be only a short time till the norms are better perfected and we shall see the bearing of Point scale findings with delinquent adolescents more perfectly. It will, then, constitute our only preliminary mental examination. This will eventuate in a great saving of time and increase of efficiency in medico-psychological work.

With delinquent minors we feel strongly the need of probing tests in the fields of emotional and volitional endowment. The large number of persons accredited with normal intelligence in our tables are the ones for whom most can be accomplished by the therapeutics which embraces within itself all the aid to be obtained

from a wise and efficient social service. In order to administer the remedy intelligently, we must know with what sort of disorder we are dealing. There is something radically wrong with the mental constitution of the boy who is drifting into a life of preying upon the property of others, and that of the girl who finds the life of a prostitute most to her liking, although both have ordinary common sense and what seems to be good control of ideation and good planning ability. The anti-social and immoral tendencies of these seemingly normal subjects must be analyzed. And before one can act with highest intelligence in his therapeutic procedure in such cases, he must hear from the psychologist. The subject's actions indicate clearly that he is abnormal. It is for the psychologist to decide upon every such individual why he has come into the hands of the Juvenile Court. It is to him that physicians, judges and criminologists must look for guidance in their attempts to remake such persons, and constitute of them, if possible, moral, social beings,—happy and productive citizens.

These remarks are not intended to deny the existence of moral defectives. Some of these individuals, whose examination results seem to indicate normal mentality, are doubtless defective in the organization of their characters, and some of these defects are probably congenital in origin. We can, therefore, not hope to remake all of these errant individuals who seem to be equipped with normal intelligence. The questions, however, of what constitutes their abnormality, and then of the origin of the same abnormality, are the great questions confronting investigators in the field of mental examination of delinquents. The Point scale, as Yerkes has said, should be developed so that examinations by the Point scale shall cover the fields of emotion and volition. He has proposed such a program. No other modification of the Binet method of mental examinations has made any significant inroad into this field of research.

One more point in conclusion. These examinations and their results have convinced the writer of the high desirability of some means of rating boys and girls in regard to *physiological development*. It is important to know concerning two thirteen-year-old boys, for example, each of whom tests ten years of age mentally, and yet the one is small and appears to be about a ten-

year-old, and the other is large and may be taken for a fourteen-year old,—it is important to know whether from development of teeth, development of epiphyses, as shown through x-ray examinations, or other means of judging of physical development and sexual maturity, whether the general appearances of retardation and acceleration of physiological development represent real facts. If the body development of the smaller thirteen-year-old is really retarded three years, and the body development of the larger boy is really that of a fourteen-year old boy, then the chances of the smaller boy developing intelligence more suitable to his age, as his body development proceeds, are very great as compared with those of the larger, but equally backward child of the same chronological age. The nervous system of the smaller boy has much more growth before it. He should really be provisionally classified as a ten or eleven-year-old boy.

Such facts must be taken into consideration in stating the mentality of boys and girls in early adolescence. Some statement of physiological age should be made a part of the examination for determining the mental and moral status of every delinquent, and the facts of physiological development must have due weight in determining the reasonable expectations in regard to prospective mental development of every subject between nine and sixteen years of age. An accurate and facile means of determining physiological age is a diagnostic aid very much needed in this line of work.

THE DIAGNOSIS AND PRESENT STATUS OF THE TREATMENT OF SYPHILIS.*

LOUIS D. SMITH, M. D.,
CHICAGO, ILL.

In this age of prevention we are attracted to prophylaxis in syphilis in two ways. It is our duty first to prevent the possibility of infection after the method suggested by Metchnikoff, by the employment of mercury ointment after exposure. Failing here, either through neglect or ignorance on the part of the patient, it is incumbent upon the physician to prevent the serious later nervous manifestations of this protean malady.

It is within our power to eliminate cerebro-spinal lues, tabes and paresis. It is within our means to do away with the complex problem of the therapeutics of these bugbears of medical science. Our opportunity came with the introduction by Ehrlich in 1910 of salvarsan, and any laggards or skeptics will sooner or later bow to the demands of an intelligent laity.

The proper way to treat syphilis is to recognize it early in the amenable chancre stage, and to do this we should not rely upon our fallible clinical judgment, but upon the cool, reliable facts exhibited by the dark field illuminator in uncovering the *Treponema pallidum*. There should be no need for a diagnostic Wassermann test for syphilis. The isolation of the organism from the primary sore in cases coming at this stage should be our aim, and treatment directed to prevent a systemic involvement, and hence a positive Wassermann.

It is not usually till the third or fourth week of the primary stage that the blood Wassermann is positive, but at this time, as Wile and Stokes have recently shown, the nervous system may already be involved, and the problem therapeutically considered is at once more difficult.

In the secondary stage, should the case so far progress, the Wassermann test can be relied upon for diagnosis in about 96 per cent. cases, in the tertiary about 80 to 85 per cent., in the latent, i. e., cases symptomatically well, but serobiologically involved, about 65 per cent., in the endarteritic and some gummatous types of cerebrospinal lues the spinal fluid may be entirely negative. In other words, the older the case the more difficult is the recognition clinically; and biologically considered, diagnostic aids are less helpful. After the primary stage nervous involvement is more apt to supervene, and then therapeutically we become mindful of a more serious aspect of the condition. The physician who permits a case under his care to so develop, must certainly be conscious of a delinquency in his ability, or else must be suffer with a depraved conscience.

So paraphrasing, although we have the Wassermann test we should seldom need to use it in new cases of syphilis that present themselves early enough to isolate the organism, and this applies also to the luetin test for late or treated syphilis, and to spinal fluid analysis.

*Read at meeting of Alienists and Neurologists, Chicago, July, 1915.

We are, however, and will be now and then, owing to mistakes only I hope, confronted with an old crop of syphilitics, infected before the advent of modern diagnosis and treatment, and with these it is our unqualified duty to do all serological tests within in our power. It is imperative that all cases have Wassermann tests, the huetin skin reaction of Noguchi, and most important a complete analysis of the spinal fluid, including a Wassermann and globulin test, cell count and gold sol test.

As no discussion of the diagnosis of syphilis is complete without a consideration of the methods in vogue, a word or two as to the laboratory technic of the most difficult will not be amiss.

We are confronted with a serious problem in the technic of the Wassermann reaction and its interpretation. It has been so commercialized that many incompetent men are relied upon for its performance, and too often the clinician feels as though his share of the responsibility ceases with the withdrawal of the blood. Little attention is paid to such important factors, as the extent of the previous treatment of the patient prior to his test, thus impairing the value of doubtful weekly positive report by the technician. The facts that the imbibition of alcohol affects a test to the extent of making a strong positive negative at times, that an infected or old serum will be anti-complimentary, that the patient's serum will often lake sheep's corpuscles in itself, that in the employment of the Noguchi technic, one individual's serum may contain agglutinins and lysins for the corpuscles of another—these are facts too often ignored. Not often does the worker deem it necessary to employ all essential controls, including the incubation of the serum to be tested with the sheep corpuscles to eliminate any sheep amboceptor that it may contain. Again, not often is the patient's serum titrated, so as to obtain the proper volume to be employed in the test. These items add to the difficulty and expense of the test, but these factors cannot preclude the necessity of obtaining the most perfect result attainable.

Fortified thus with an accurate insight into the condition of the patient gleaned by the laboratory methods mentioned, we are then and then only prepared to manage theluetically.

In the consideration of the treatment of

syphilis we have first to rehash our knowledge of the standard drugs, mercury, salvarsan and neo-salvarsan. Mercury is the oldest, and has certainly stood a fair test of years. There can be no question as to the authenticity of second infections reported in cases managed with it. But mercury is a slow working drug, and the most hopeful standpatter advises a three-year course. Unfortunately he cannot, in view of our present knowledge, guarantee a freedom of nervous involvement during the active treatment. Craig reports cases who have been absolutely uninfluenced by a two-year course with mercury, at least as far as the Wassermann is concerned, and who responded to one salvarsan injection. I believe mercury is now used mostly as an adjuvant to salvarsan, and is especially indicated where the spirochete has become tolerant to arsenic.

Salvarsan is the drug par excellence in the management of lues. It contains arsenic in such proportion that but for its amino combination it would be many times toxic in the usual dose. Its action is best explained by Ehrlich's side chain theory, the amino and hydroxy radicals acting as the haptophore that attaches the spirochete and then permits it to be attacked by the toxophore, arsenic. Neo-salvarsan, though easier to administer, is, however, less efficient because of its quicker decomposition from its most efficient combination. Craig has shown it to be clinically about one-fourth as efficient as salvarsan, and Bacelli has shown it to be one-third as effective in the rabbit.

The successful management of syphilis at any stage depends upon the intensity of the treatment. Whereas, Ehrlich's hope of a *therapia sterilisans magna* has been shattered, we can but resort to the next best thing, consisting rather of moderate doses frequently repeated so as to keep the system well saturated with arsenic, and thus prevent any possibility for relapse, than to give large doses at long intervals.

With this in mind, we shall proceed to outline the treatment of lues in its various stages.

The primary stage with the negative Wassermann should immediately upon diagnosis receive from 0.3 to 0.4 gm. salvarsan, depending upon the size of the individual and upon the sex. This should be repeated at four-day intervals, until an

average of four doses has been given. Then mercury either by injection or inunction, preferably the former, should be administered for a month, at the end of which time a full dose of salvarsan is given. There is no such thing as overtreatment, for it is better to treat too long and too much within safety's bounds, than to give too little and regret. It is desirable to take a Wassermann test even though it were negative to begin with, for assurance's sake.

In the late primary stage with systemic involvement, as manifested by a positive Wassermann, before treatment is started, a complete spinal fluid analysis should be instituted. The management even with spinal fluid involvement should be that of the early primary stage, with this exception that in the absence of arsenical intoxication, an average of six successive injections of salvarsan should be administered, and at the end of the mercury course four more half-doses given at weekly intervals. A resting period of one month follows, when a blood Wassermann and spinal fluid analysis are again instituted. If both fluids are found to be negative, another half dose of salvarsan is given with the idea of provoking a relapse, dependent upon the persistence of organisms and called a provocative injection. The blood is then taken at twenty-four, forty-eight hours and seven and fourteen-day intervals for Wassermann analysis. The principle involved is that with the destruction of some of any remaining spirochetes, their death evokes antibody formation due to the liberation of toxins, and these antibodies are more specific than those elicited ordinarily in the performance of the Wassermann test. And so in the absence of a positive Wassermann the patient can be pronounced cured. In view, however, of the comparative newness of the present form of therapy, it is urgently desirable to repeat the Wassermann at long intervals for about two years.

The second stage presents a more difficult problem. At this stage the disease often resembles an acute infectious disease. Because of the possibility of an occasional Herxheimer reaction, which depends upon the overwhelming of the system by the toxins of the numerous destroyed spirochetes, following the intensive action of salvarsan, it is advisable to prepare the body against such an event; this is accomplished by a pre-

liminary two weeks' course of mercury. The course of salvarsan injections then follows much after the manner of the late primary stage. It varies only in that these courses may require two or three repetitions, but in any event there is seldom, if at all, the necessity of drawing out the course to three years, the period previously adopted with the mercury method by tacit consent.

The spinal fluid bears a close watching at all times, and if involved, it is advisable to repeat the analysis three or four times in the space of two years, following the provocative injections.

In the tertiary and latent cases, there is nothing especial to be added with the possible exception of the fact that we must not be misled by a negative blood Wassermann. We again call attention to the fact that a negative blood Wassermann is not at all indicative of a freedom from infection, for the cerebrospinal axis may harbor the spirochete, and sooner or later will be the source of a fresh outburst.

The intervals of injections and dosage have not been arbitrarily chosen. It must be remembered that to successfully combat this infection we must attempt to prevent any further growth or development of the spirochete. It was with this in mind that clinicians recommended mercury to saturation. And it is likewise with this in mind that we recommend saturating the system with the more potent salvarsan, if complications do not arise to prevent this. In my work I have been guided to a large extent by testing the patient's serum or urine for salvarsan or its derivative, and its presence or absence indicated the time for the next injection. The test employed is the Abelin test utilized by Swift and Ellis in determining the most propitious time for withdrawal of blood for salvarsanized serum preparations. It is true that after intravenous injections, arsenic may remain in the system for even a month, and again it may be completely eliminated within twelve hours. There is, however, the tendency with repeated injections for the arsenic to remain longer and longer in the system, and hence our purpose is satisfied. Accordingly the interval previously specified represents the average in my experience.

The treatment of nervous syphilis, we repeat, is a complex problem, complex because we make

it so. The trend of modern therapy is toward intraspinal medication to the exclusion of the sole intravenous method. As an example, Bernstein about a year or so ago, with the statement that every case of syphilis is potentially a nervous one, advocated a prophylactic intraspinal injection even in the primary stage. There is no doubt but that he took an extreme attitude. The problem resolves itself, however, into the question of the permeability of the meninges to salvarsan. Contrary to the statement of authorities, including Swift and Ellis, that the choroid plexus and ependymal lining cells are impermeable to salvarsan, following intravenous injections the drug has been discovered in the spinal fluid. Clinically this has been well supported by reports of Collins, Leredde, Craig and Collins, Kaplan, etc. In our practice we have seen marked benefit by this method of treatment, especially the intensive. This has been especially noticeable in cerebrospinal lues cases. Why some cases and not others have been thus benefited, is a question hard to answer. Kaplan says the hyperlymphocytic types of tabes, representing the irritative, that is, cases with abundant cells in the spinal fluid, are very apt to be beneficially influenced, whereas the hypolymphocytic or degenerative type is hopeless. It has often occurred to me, as explanatory of this state of affairs, aside from the possible individual peculiarities of the patients, that cases with a tendency to or developed endarteritic changes of the vascular supply of the nervous system, would include those resistant to treatment. I am not aware of any reports of investigation along these lines, and I believe interesting data could be elicited. At any rate the fact exists that the spirochete in the nervous system in many cases is safely immured against an intravenous salvarsan attack.

This leads to the direct intraspinal treatment. It may be of interest to know that in 1909 Heym of this city, reported a new treatment of tabes, based on a new theory as to its cause, namely, a toxin circulating in the spinal fluid. The therapy consisted of sodium cacodylate injections intraspinally at frequent intervals, especially directed toward gastric crises, with very beneficial results. Little credit has been given to Heym's ingenious

theory and form of medication, which antedates even Horsley's attempt to irrigate the subdural space with mercuric chloride solution.

Three years passed before Swift and Ellis reported their findings and methods for intraspinal injections of salvarsanized serum, the technic of which is now universally known.

A word as to the present status of intraspinal injections. Finding the original technic of Swift and Ellis rather laborious, attempts have been made to simplify the technic, originating with the direct neosalvarsan injections as devised by Ravaut. It was soon found by followers of the various technics that untoward results were very apt to ensue with the employment of the modified methods. Personally, I have been compelled to discontinue them for the original technic, as mentioned in my recent report, and have had excellent results with no untoward phenomena with the employment of even an ounce of serum. There is this factor that can not be ignored in favor of the original technic, and that is, that by employing the salvarsanized serum, prepared in vitro, circulating antibodies are administered along with the serum; and in accord with recent observations of the employment of convalescent serums in other infectious diseases, the salvarsanized serum of a convalescent leutic would be still more desirable.

After a careful perusal of the literature, we cannot longer sit idly by and disregard the favorable results of intraspinal medication. The method has been recently extended to intracranial and intraventricular injections in paresis, since it is believed that the spinal cerebrospinal fluid does not carry medication upward past the tentorium. Cotton has, however, demonstrated salvarsan in the ventricular fluid after intraspinal injection in two cases of paresis that came to autopsy.

What are the indications for intraspinal or intracranial therapy? I believe that all cases of cerebrospinal lues, if time and conditions warrant it, should first be given intensive intravenous treatment; failing thus, the radical method should be employed. Early cases of tabes can likewise be handled conservatively, and at times advantageously. Witness the report of Leredde for enthusiasm, of a case of tabes cured by one intravenous salvarsan injection! There must have been phenomenal improvement to warrant

such a report, which, indeed, was received with much criticism, but it serves to emphasize the fact that intravenous injections are of some avail at times. I believe it is becoming more and more the method of choice, however, to treat tabes intraspinally from the beginning.

Saturation in intraspinal medication is as desirable as in intravenous, and weekly intervals of large doses according to the tolerance of the patient has in my experience been most beneficial. Observation of the patient over a prolonged period after an arrest or apparent cure of the disease, including spinal fluid and blood analyses at various intervals, is indicated. A relapse is invariably indicated by the reappearance of a positive Wassermann test, which, indeed, may be our only clue to the recrudescence.

Paresis offers an altogether different problem. As the condition of the paretic is hopeless and his life short, the more heroic methods, including even intracranial injections, should be tried.

Can syphilis be cured? I believe it can, even in old infections. Authentic cases of reinfections have been reported. Destroyed vital tissues, such as nerve structure and myocardium cannot be replaced, but the function of the affected organ is only partially impaired in proportion to the extent of the disease.

Can syphilis of the nervous system be cured? If by cure we mean restoration of function, yes. As an example, the loss of sphincter control in the tabetic can be relieved. However, the Argyll-Robertson pupil cannot be removed and neither can the lost knee jerks be recovered, but the patient can very well exist in fair health despite these stigmata. So far as we know now progression or rather retrogression in a luetic with nervous manifestations can be arrested.

Summarizing, there should be a crusade to prevent syphilis by employing the prophylactic means at our command. We should utilize all the diagnostic aids at our disposal for the diagnosis of syphilis, the best time being early in the first stage, for then the prognosis for an early cure with no complications is the most favorable. Immediately upon establishing the diagnosis intensive treatment should be instituted, and where indicated subdural injections should be included.

25 East Washington Street.

PRE-INSTITUTIONAL CARE OF THE INSANE.*

WITH REMARKS CONCERNING CONDITIONS IN THE STATE OF ILLINOIS.

C. C. ELLIS, M. D.,
Chicago State Hospital.
DUNNING, ILL.

Perhaps no one I address can recall the days when insanity was looked upon as a manifestation of the Evil One, but some may at least remember when the insane person was divorced from all concern or pity and the result of his so-called reprehensible conduct was visited on his own head. The penalties of neglect and abuse were meted out and the application of barbaric restraints permitted even in our state hospitals. The almshouses barely tolerated these estranged individuals, or by neglect exterminated them. Today we find considerable advance in their treatment has been made the world over. Some of our American communities are equal to, perhaps in some respects superior, to any in the world in their medical and custodial care of the insane. They have organized this work to a high grade of service. This has not all been achieved, however, by the efforts of medical men, I am sorry to say. The very fact that medical men are now the recognized custodians of the insane of all types is due to the inspired vision of noble minded laymen and women who conceived the insane to be a medical problem and advocated their hospitalization. Undoubtedly a clearer vision in many matters has been due to the first-hand investigation of hospital physicians, yet one has to admit again, with regrets, that the oldest men in the service have not been the foremost in reform, and the younger, not the older institutions, are usually the promoters of the more liberal views of treatment and care. Institutions and institution physicians have not enjoyed the full measure of respect from their colleagues in private practice. No doubt this has been justified by the routinistic attitude of the majority of insane-hospital physicians, though possibly there are fairly good reasons for this attitude. The glittering bauble of fame, the substantial prizes of private practice seem both remote and un-

*Read by invitation before the North Side Branch of the Chicago Medical Society, April 9, 1915.

attainable. Many of the problems seem too deep for solution for even the most advanced thinkers. However, there has always remained a sprinkling of sincere and energetic workers and if we inquire into the histories of some of our most eminent medical men in this city alone, we will find that they have come out of the service among the insane with a broadened vision, and experience which has been the foundation for all their future success.

Admitting the fact that the direct care of the insane is now regarded as a purely medical service, nevertheless the study of the insanities becomes a broad education eventually, as it leads to other tremendous social problems. Underlying are deep rooted questions of social hygiene and social economy that deserve our increasing attention. When a considerable portion of the state's income goes to the upkeep of our rapidly growing state institutions, and when we know, for example, that the traffic in alcohol has become a vital political issue and the abuse of alcohol is responsible directly or indirectly for a high percentage of insanity, one can readily see that there should be some lessons learned and these lessons could be well taught by men who are active in the care of the insane. The rôle that syphilis plays and the general pressure of our modern civilization are best estimated when we commence to dig out the predisposing and exciting factors of our insanities.

I cast no blame when I state that probably 90 per cent. of the physicians of Illinois have no correct knowledge of the manner of care of the insane in the Illinois State Hospitals, and I am sure that a large percentage have no definite knowledge of the causes for the insane being there. The majority have never seen the inside of a hospital for the insane, and as for making a diagnosis of insanity that would excel the one easily made by most laymen, I question whether 1 per cent. would consider themselves capable. There is a strange gap in the ranks of the profession between the insane-hospital physician and other practitioners. It is on account of this gap that there remains so immense a problem, yet with but a few medical men working to solve it. The insane are taken from their homes and other environment, sent to a hospital and segregated from their fellows, and become of no interest to

any but the hospital physician. The outside practitioner is only concerned indirectly through the wrecked families that are left to further burden the community. The rest of society counts its duty wholly done when it selfishly banishes the doomed individual to a life of seclusion. The ranks of those from whom future candidates for admission to hospitals will come, remain unenlightened. They are not taught any warning by the tragedy of the misfortune that has fastened itself on the victims gone before. They are following them as regularly as the clock strikes the hour. The medical profession, as a whole, remains ignorant of the facts and seems powerless to help, though here and there individual members point out clearly the elements of discord in the social life. Obviously there is something lacking. There should be some agency or means that could bridge these gaps and make society more conscious of its own errors, so that it may apply corrective measures. It is the ability to learn from mistakes that distinguishes the normal mentality from the defective. Society can be characterized as defective with perfect justice if it fails to profit from the sad mistakes of its social failures and apply the needed correctives.

It is becoming recognized that highly trained psychologists and physicians are needed when criminology is studied. No one is better equipped than the graduate in medicine to perceive the relation of bodily or mental defect, as well as errors of personal and public hygiene, to crime. Much more truly can it be stated that physicians are the best fitted to grapple with the predisposing and exciting factors of insanity. For physicians not to enter this field would be to retard social progress and cut out from under their own feet the ever widening field of mental hygiene which must join with all other forms of hygiene. Though I will warrant if you take any average body of physicians and ask them if they feel fitted to attempt the task of unraveling the complex social problems underlying insanity, they will answer "no." The ethical physician is trained in conscientiousness and will not claim powers that he thinks he does not possess. He feels that he is not prepared for such special work, but here is the kernel of my argument. Self-interest alone should prompt medical men to look about them and see that much of their

former work is becoming narrowed by the measures of public preventive medicine and organized charity on one side, and the cults and -isms on the other. Whatever the trend of the present may be, to stand still is to suffer dissolution, but to adapt to changing conditions is to progress. A ready realignment with the trend, whatever it be, is necessary. One should get in line with evolution.

No doubt to appreciate the full significance of factors underlying insanity, the psychoses may first be studied as we find them in the State hospitals. These, however, are more the result than the process of development. Still the state hospital physician has a chance to work backward on the problem, but so far has had little opportunity to co-operate with the outside physician in preventive measures. There are two great causes for this latter condition, first, the lack of training in psychiatry that exists in the case of the average physician, and secondly, the seclusive manner in which hospitals for the insane are usually conducted. To give every medical student a thorough grasp of mental diseases should be the duty of every medical school. To be able to give an adequate course in mental hygiene and psychiatry should be the pride of every post-graduate school. It should be the earnest purpose of the state to co-operate with all such recognized teaching institutions in order that a knowledge of mental diseases be spread in the land. This is no idealistic point of view. As a matter of economy for the state politic, if the medical profession could keep but one individual from enforced idleness in an institution for one year, it would save the state that patient's per capita cost of \$175.00 or more, enough to pay, perhaps, for the services of one instructor for one month, likewise twelve such cases a year would pay his full time, as the result of which the saving might be greatly augmented in the future and humanity much benefited.

I did not come here merely to point out weaknesses in present day medical education and the unpreparedness of its graduates. I wished to create in your mind, first, a feeling of the necessity of a more intimate knowledge of mental diseases and then to acquaint you with the existing shortcomings in the attempts now made to care for those individuals already showing sufficient

mental disturbance to warrant their apprehension and detention. Do you realize that it is quite a recent conception to make any distinction between the insane and criminals? In Illinois we still find the insane and criminal handled by the same agencies of the law and adjudicated by almost identical processes. We find the machinery of the law ready to seize upon the lunatic and subject him to the same careless abuse and delays that the most hardened criminal has to endure, and frequently when the inquest into his insanity is being conducted, the rôle of the prisoner before the bar is forced upon him. If the symptoms of insanity were so difficult to detect or the patient's conduct always suggestive of the criminal, the case would be different, but the acts of the insane are usually so ingenuously prompted or are so bizarre that even a layman is hardly ever at a loss to detect such mental aberration. As it is, the so-called disorderly conduct of the patient is allowed to overshadow every finer consideration. We, at least, of the medical profession, must realize that mental disease is almost invariably accompanied by underlying physical disease, either organic defect or disturbed function. Physicians must keep this in mind and become more conversant with the pathology and biochemical dysfunction responsible for mental disorders, then the care of mental cases would largely be solved. I can prophesy a day when the improved methods of handling the insane that I am going to suggest will be commonplaces and the other aspects of the insanities will claim our entire attention.

Recently before another branch of this Society¹ it was my privilege to call attention to conditions surrounding the insane in Cook county and to describe the treatment usually experienced by them during such critical episodes as their apprehension, detention, examination, commitment and conveyance to state hospitals.

I wish now to turn to jail conditions in different parts of the state.*

In Quincy, Adams county, the jail is provided with iron cells with troughs in the back flushed by running water. A padded cell is provided for the insane. At Cairo, Alexander county, the jail is located in the rear of the city hall. It has poor light and ventilation. Condemned as insanitary. At Champlain,

1. See Illinois Medical Journal, June, 1915, page 458.

*Institution Quarterly, Sept. 30, 1913.

Champlain county, the jail consists of a dark, insanitary room with four iron cells, iron bunks with bedding; rats infest the place; tramps, minors, drunks and suspects are placed in this insanitary place, no mention of place for the insane. Champlain county jail is provided with an insane cell, "not padded" (a naive admission). "A violently insane man can easily injure himself on the iron bars." I might digress here and state that padded cells hold a high place in the regard of the down state jailor. Streator city jail, La Salle county, "is planning to pad a small room," evidently as a great step forward! Belleville city jail, St. Clair county, "a padded cell is provided for the insane, but so placed as to be badly ventilated, although it has a screened top." Rockford city jail, Winnebago county, "there is a padded cell ventilated by a bar transom." DeKalb county jail has "a padded cell for the insane." Padded cells also in Lake, Lee, Logan, Macon, Mercer and Piatt counties. At the Kewanee city jail, Henry county, "insane are frequently held over night. No special provision is made and there is no regular night watch." It is very unsafe to hold an insane patient under such conditions. Elgin city jail, Kane county, within gun shot of one of our best state institutions, has "a detached hospital cell, dark and badly ventilated, equipped with cot, springs," etc. Apparently insane are kept here and placed in the same room with tramps, minors, drunks and suspects. At Kankakee city jail, Kankakee, Ill., the home of our largest state institution, women, children, insane, drunks, suspects, all are confined in one room, which is the Kankakee lock-up. La Salle city jail, La Salle county—insane are confined in one of the cells in the same room with all other persons. When very violent are "handcuffed to the bars." Ottawa city jail, La Salle county—"insane are detained in iron cells, with an iron bunk. The place is filthy and practically unventilated." In Bloomington, McLean county, the insane are taken directly to the county jail, said jail being one ill-ventilated room about six feet below the ground level. The McLean county jail is termed as an unfit place for the detention of human beings. Peoria city jail, Peoria county, has no provision for the insane. It is said to be above the average jail. Peoria county jail has a cell "not fit for detention of insane." Moline city jail, Rock Island county—no place is provided for insane, who are often held for several days, as there is no place at the county jail for confinement of an insane patient pending trial. East St. Louis city jail—no provision is made for detention of insane patients.

The county jails are described in the same condition, a few of them a little more cleanly, but none of them with any proper facilities for the insane. Many of these jails keep prisoners from hours to days, or a week, until the court finds it convenient to meet or commissioners are called to examine the patient. The sheriff usually is

then called upon to take these patients in all stages of physical and mental conditions to the State hospitals.

When we consider the treatment that the insane patient is liable to receive at this critical stage, we are convinced that conditions demand improvement. I have commented on the broad general subject of the care that the insane might obtain in the incipient stages if all of the physicians in the community were alive to the significance of various factors, but if we cannot expect to immediately obtain co-operation in the earliest stages, is it too much to ask that the insane be treated as sick people when their conduct and the symptoms of their disease become flagrantly noticeable? The state of New York has placed insanity on the plane of other health work by requiring its health officers to care for any cases of insanity in different parts of the state when they are called upon to do this. We have no such designated public medical officers in Illinois that work under any system of state health work. We might suggest that in the larger cities the health officer or commissioners or city physician could be designated; in Chicago, the Psychopathic hospital; outside in the counties, the county physician, or some certain physician could be delegated to this duty either by action of the local authorities or by arrangement through the Board of Administration. It would be wise to have such individuals amenable to the rules and regulations of the Board and removable upon complaint. Any conceivable plan probably would be better than the present jail conditions. In addition, the status of the whole care of the insane would rise to a higher plane. The idea should be to treat insanity as any other health problems, to have some one definitely responsible for the proper care of the insane in the pre-institutional stage, to provide proper medical and nursing attention for the brief period it will be necessary to hold them prior to their being sent to psychopathic wards in the larger cities or the State hospitals. Attempts have been made to secure a law allowing patients to be detained longer than ten days in the Cook County Psychopathic Hospital. Undoubtedly many cases could be more wisely handled than they are at present if more time were allowed for mental conditions to clear up, recover or start toward convalescence. Cer-

tain cases can be handled entirely within the walls of such a hospital. There are other cases whose treatment is best carried on in the State hospitals, in different surroundings than those of the crowded streets of the city. We need a few such psychopathic hospitals throughout the state, but their administration is the only vexing question. We no longer permit counties to take care of their insane after commitment. We find the exigencies of county politics creeping into such a system. No general hospital, as in New York, has fitted itself for the work. In Cook county one would be loath to leave it to the Cook County Hospital for reasons easily inferred. The problem seems one for solution by the existing state organization with a more or less definite association in Cook county with the Chicago State Hospital.

Perhaps, as has been suggested, the Cook County Psychopathic Hospital might go hand in hand with the State Psychopathic Institute, thus broadening the work of that institution. In whatever manner it is to be handled, the prime essential is an earnest effort to do real service by eminently qualified officers and the work must be entirely co-operative with state hospitals, other licensed hospitals for insane, general hospitals and charitable organizations.

There are several aspects of pre-institutional care of the insane that have not been mentioned. As an educative factor in the community, some refinement in this care cannot be overestimated. It will alter the attitude of the public toward state institutions, make them more liberal, make them more willing to permit the secrets of the asylum to be probed for their very salutary lessons to the public. There is one very big feature that will be immediately reflected in the state hospitals themselves and it is this: State hospitals are drawing their attendant forces not from the training schools of our state, but quite generally from the remote districts of Illinois and adjoining states, where chances for advancement are not numerous, where salary standards are low. This raw material, I am sorry to say, owing to the great demand and shortage, is immediately placed in charge of human lives, often without a day's previous training. They are often in fear of their charges, because since babyhood tales of crazy men and crimes alleged to lunatics

have been brought to their ears, tales of atrocities in asylums have been frequently read, for newspapers gloat over occurrences, which they magnify into scandal. Is it any wonder that barbaric acts on the part of some attendants do occasionally occur, and is it any wonder that even a lay jury, as has recently happened, will permit brutal offenders to escape punishment because their sympathies were stirred by wily or naive arguments of self-defense on the part of the perpetrators? It is true there is sometimes a disproportion between the physique and always between the numbers of the employees and patients in a state hospital, but the alleged cunning and violence of these patients is much overdrawn. I have yet to see any organized or well directed outbreak of any band of patients. The inherent nature of most mental disorders prevents this. It is, therefore, undeniable that to create a different attitude toward these problems we must start with the community from which both the attendants and the insane come, and by creating favorable object lessons, prepare the minds of prospective attendants, the future body guards of the insane, to the conceptions of mercy and true nursing service.

I wish to mention methods of commitment. In Illinois there are three forms—commitment by jury, commission, and voluntary. When a complaint is filed with the clerk of the county court, signed by witnesses, one of whom must be a physician, the judge may issue an order detaining a patient not more than ten days. Then as the statute runs: When no jury is demanded and the circumstances in the case are such that there appears to the judge to be no occasion for the impaneling of a jury or that a trial by jury would for any reason be inexpedient or improper, the judge shall appoint a commission of two qualified physicians in regular and active practice who are residents of the county to be chosen by himself on account of their known competency and integrity, who shall make a personal examination of the patient and file with the clerk of the court a report in writing verified by affidavit of the result of their inquiries together with their conclusions. They can take sworn testimony and recommendations, but *the joker is that the judge shall always preside whether the inquest is by jury or commission.*

I have compiled the admissions to the Illinois State Hospitals for the period ending September 30, 1914—see table below.

State	Jury	%	Comm.	%	Vol.	%	Mitti-
Hospital							mus
Jacksonville	72	10	639	87	21	2	..
Anna	28	3	833	95	19	2	..
Watertown—							
Outside Cook	105	19	338	63	95	18	..
Cook	22	84	3	12	1	4	..
Kankakee—							
Outside Cook	32	6	405	79	75	14	4
Cook	1,391	95	31	2	36	2	1
Elgin—							
Outside Cook	234	55	165	39	23	5	..
Cook	699	83	54	6	90	11	1
Peoria—							
Outside Cook	302	31	407	42	243	26	..
Cook	197	100	..	..	..	..	..
Chicago—							
Cook	1,539	96	..	..	52	3	..
Totals (outside of							
Cook Co.).....	4,312	41	2,787	48	528	9	4
Totals (Cook Co.)..	2,309	91	88	3	127	5	2
Totals, all counties..	4,621	..	2,875	..	655	..	..
Total admissions.....							8,151
Yearly average.....							4,075

In counties outside of Cook, I have ascertained there are individual variations showing the attitude of the county judges to be largely responsible. The management of state hospitals where so minded frequently can and have altered these conditions in districts surrounding the hospitals.

Massachusetts has amended its law so that any hospital for the insane, public or private, may accept patients needing immediate care by having filed a written request at time patient is admitted, or within twenty-four hours thereafter, together with a statement in a form prescribed by the State Board of Insanity. Patients cannot be held longer than seven days without a legal or voluntary commitment. If cases are not regarded suitable for such immediate or other care, they will have to be removed by the person making the request. State commitment is secured by the manager or superintendent appointing two qualified physicians to examine the patient and make out a certificate recommending the commitment or order of removal of the patient unless the patient demands voluntary commitment.

W. L. Russell, superintendent of the Bloomingdale State Hospital, writes of the conditions there: "The New York law provides for the admission of patients to state or private institutions on voluntary application. Under this procedure the patient signs the application at the hospital in the presence of a witness, agreeing to give ten days notice in writing if he desires to leave. This method is working out very well, it is stated, especially in private institutions.

"A patient may also be received under what is generally referred to as emergency commitment. This consists of the usual application to the court for the commitment of a patient and the certificate signed by two physicians. Under the authority of these papers the superintendent may detain the patient for not more than ten days. The commitment and certificate

are made out in duplicate and one copy is taken to the judge for the purpose of securing an order for commitment.

"Under the law, application for the commitment of a patient can be made only by certain designated persons and the medical examination must be made by examiners in lunacy, who are simply physicians who have filed with the state hospital commission at Albany a certificate signed by a judge of a court of record, which shows that the physician is responsible and has been in practice for not less than three years. In a great many instances, probably in most, at least outside of Greater New York, the patients are examined at their homes by private physicians. If it is necessary to appeal to a public officer the proper one to appeal to, except in Greater New York and Albany, is the medical officer of health. In Greater New York the commissioner of charities and the trustees of Bellevue and allied hospitals are the officers to appeal to. The duty, however, is delegated to the chief alienists of the psychopathic wards of Bellevue and Kings County Hospitals. A year or two ago the law was amended so as to authorize the authorities of the hospitals referred to to send an ambulance with nurses, and a physician if necessary, to bring an insane person to the psychopathic ward when requested by certain designated persons. Since this amendment went into effect a very small proportion of the mental cases which require hospital care in Greater New York fall into the hands of the police. A bill is also pending in the legislature which, if it becomes a law, will authorize the superintendents of the state hospitals to accept patients for ten days for observation when requested to do so by the medical officer of health."

In this state we unquestionably need improvements in our commitment laws. Would it not be better if in districts where state hospitals are already located, and they are now becoming so numerous that they are quite accessible, patients could be admitted on emergency commitments on the request of two reputable physicians, or on the complaint of a health officer, pending observation by the state hospital? Or admitted on a voluntary commitment by signing an agreement when entering the institution? The voluntary commitment in Illinois is practically a failure. The great reason for this is that many patients, and I have noticed this particularly in Cook county, are asked to sign a voluntary commitment by the court when they do not fully understand or appreciate its significance and when they learn they can leave the state hospital within three days they usually quite promptly avail themselves of this provision. This has been noticeably the effect in drug cases, recently admitted. It is often the case in border line cases of hypochondriasis

and neurasthenia, who are quickly discouraged and in momentary periods of disquiet and discontentment file their request to leave. It would be better if the law required them to give 10 or even 30 days notice. In exceptional cases where in the judgment of the physician the patient could justly be permitted to leave the institution, the notice could be dated back and no hardship necessarily be imposed on any patient. But in those cases where the time element in treatment is all important, the provision could be enforced.

Why should processes of commitment involve any but the minimum of legal procedure? It may have been true in times past that patients were confined unjustifiably, and legal procedure was instituted to guard a man's liberties. But have not courts proven their inefficiency to deal out justice in all cases? The innocent are occasionally made to suffer for the guilty and again the guilty escape their just punishment. Therefore, one cannot argue that courts are invariable protections. Again a court in the face of technical difficulties such as the diagnosis of mental disease must call upon medical aid.

Why should we desire commission or emergency and voluntary forms of commitment? The answer is this: Methods of commitment are largely the index of a community's realization that mental disease, like other bodily derangements, concern chiefly the medical man and that our institutions for the insane are no longer merely asylums, but hospitals. Not alone that, but if we can take away from the consciousness of the mentally afflicted the fear that legal procedure inspires on account of its many other associations, we are immediately administering our first aid, we are placing the patient at once in sympathetic and trained hands where the phenomena of the clinical course can be properly observed and recorded, where treatment can be instantly instituted to the best advantage. We are also softening the blow that falls upon the relatives and the community, for they are averse to accepting a legal interpretation of insanity in the vast majority of cases, but recognize the trained physician to be the only competent judge of mental alienation. Many discerning laymen are capable of roughly judging between a condition of sanity or mental derangement, but they are lost

when any intricate phases of the disease complexities are to be unraveled. The alienist must decide also, whether the case before him is temporarily deranged or not, and he may stay the hands that often are precipitate in incarcerating patients suffering from transient excitement, delirium, alcoholism or extreme senility. The functional cases are especially to be discerned and helped.

This work can only be fully developed in centers of dense population. But again I say we must have trained physicians in more remote districts. With better standards of medical education and compulsory courses in psychiatry, we would soon find men disseminated throughout the state who could, when required, gather data and make a sufficiently careful examination to answer any legal inquiry concerning an individual's sanity and remove any doubts that they need treatment or observation in a properly equipped hospital. Such men would render the hospital receiving such patients valuable help by their early observation and interest in the case. We must emphasize this fact, that we must not appeal to judicial, but medical means first, in handling early cases of insanity and the courts can be called upon to legalize the action of the medical men when more desperate steps must be taken.

With the increase of voluntary and emergency admissions, the problem of conveying insane cases to the hospitals would be partially solved, as physicians or health officers would arrange proper transfer to the state institutions or psychopathic wards. For the other cases, the sheriff unquestionably must be removed and his place taken by trained attendants, nurses or state hospital physicians. From Cook county, where groups of patients are handled, a special conveyance should be provided and facilities for taking them directly from the doors of one institution to the other must be arranged for. In Cook county special cars should be run via the electric roads with a little additional laying of tracks, from the Psychopathic hospital to the state hospitals of Chicago, Elgin and Kankakee. A hospital car could have every convenience for patients in all conditions. An investigation conducted recently into the records of the sheriff's office shows that the possible saving in cost would not be great, but an extremely crude state of affairs

would be remedied. We find such records as the following:

"Removed patients to Kankakee—8 patients, 5 bailiffs, 1 nurse."

"19 patients, 10 bailiffs, one nurse."

"7 patients, 4 bailiffs, one nurse."

"1 patient, 1 bailiff, 1 nurse"—and so on.

The same procedure is carried out in transferring to other state hospitals. It is very evident that an excessive number of guards is thought necessary for these patients. The bailiffs employed are not trained, sometimes neither sympathetic nor careful, quite frequently stimulated with liquor.

I have presented the foregoing in the attitude of constructive criticism, for I wish to inspire you with the thought that these matters are highly important to the medical profession itself and will become more so as time goes on.

CAUSATIVE FACTORS IN THE PSYCHONEUROSES.

By MEYER SOLOMON, M. D., CHICAGO.

Under the term "psychoneuroses" I include those conditions which are generally classified as neurasthenic, hysterical and psychasthenic states, as well as hypochondriacal and melancholic states in their slighter forms.

It is not my purpose here to discuss the classification or the differential diagnosis of the psychoneurotic states, nor is it my object to enter into the problem of the genesis and gradual evolution, that is, the mental analysis of these conditions. In other words, I shall not discuss the interesting psychological aspects which have been holding the attention of so many students in the field of psychopathology and psychiatry.

I desire to do no more than to call attention to the basic factors concerned in the production of the psychoneuroses. This I shall do very briefly. This means that I shall not in this place concern myself with the theories of the investigators in this field in France (such as Janet, Dubois, Dejerine and others), in Germany, Switzerland and Austria (such as Freud, Jung, Adler and others), or here in America (such as Sidis, Prince and others).

The groundwork or the essential factor in the psychoneuroses is found in the existence of a natural psychopathic tendency. This tendency

is due to heredity (germinal, innate in nature), to intrauterine or foetal conditions, and to educative influences in the life of the individual. In consequence of this, there has been developed a certain primary mental weakness or psychic asthenia. In each type of psychoneurosis we see a certain type of mentality. This mental state or attitude is primary. It is this which constitutes what is nothing more nor less than a type of psychic inferiority.

Now, all of us have certain defects of character, of mental makeup. These mental defects or psychic inferiorities are the factors which handicap us so much in our battle in life. But, spite these mental defects, most of us find ourselves able to travel through life's course in a fairly smooth and satisfactory manner, and to hold our own, our mental equilibrium, in a normal manner. At least we are not incapacitated by these deficiencies to such an extent that we become nervous, or rather mental invalids.

The psychopathic inferiority of the psychoneurotic, of the psychopathic individual is, however, of greater degree; his mental defects are more apparent and more easily unearthed. He is more apt to exhibit his defective and imperfect mental constitution, which then shows itself as one or the other of the types of psychoneurosis, or an admixture of them.

The psychic disequilibrium or peculiar mental attitude which we see in the psychoneurotic disorder is thus nothing other than the natural psychopathic tendency which the individual always had but which is presented to us in the psychoneurosis in more pronounced and more characteristic, more typical form.

Under certain situations and under the influence of certain accidental causes, of a protean nature, a dissociation of the mentality, with an eruption of the psychic inferiority may be brought about. This is the psychoneurosis which makes its appearance at some crisis. It is therefore plain that the psychoneurotic disturbance is only an episodic manifestation of the fundamental psychopathy which has been stirred into activity by the provocative agents or disintegrating factors. With Dubois¹ we may say: "As the tree grows, so it falls."

The psychopathic individual is thus sensitive

¹Nervous States: Their Nature and Causes, by Paul Dubois. Translation by Richards. Page 84. New York, 1910.

and impressionable with respect to his mental defects and is with difficulty able to resist external or somatic influences of any sort which excite his particular type of mental reaction. There is, as a result, a lack of mental balance, a limitation in the power of adaptability to the various novel, unfavorable and inimical conditions in life, a difficulty in the production of mental synthesis and equilibrium and equanimity, an inability to adequately face reality and a tendency to flee in the direction of the character defects, the mental imperfection, the psychic inferiorities which are, for the particular individual, the line of least resistance.

In the psychoneuroses, as in the psychoses, we see the false or wrong way of meeting life's battles. Instead of fighting reality there is flight to unreality.

The accidental causes which are the direct inciting agents of the psychoneuroses are naturally of secondary importance. It is the mental attitude which is primary. But since all of us have defects of varying degree, and since the intensity of the psychopathic tendency differs in different individuals, and since, furthermore, the inciting factors may be of many kinds and of varying degrees, it is very necessary for us to pay careful attention to the possible accidental causes. Many individuals who have never developed a psychoneurosis because they have not been put to the strain or test, may possibly exhibit such a reaction of one sort or another if the psychic bombardment be persistent and severe enough. At least such might have been the case if their condition of life had been different—it may be only a little different—from what they actually happened to have been.

The defective manner of reasoning and judging, of thinking and feeling, in short, of reacting, present in the psychoneurotic, may become intensified and unearthed by any kind of emotion. It is emotion, acute or chronic, which brings on the psychoneurosis. It is in the field of emotion that the real inciting cause is found. It is this emotional factor which causes the psychoneurosis to appear, which makes the psychoneurotic think and feel and act as he does. The origin of these emotions is multiple. It includes all possible factors, of a somatic or environmental character, with which man has to deal. Those who would lay all the blame at the

door of sexuality (and of a perverse and degrading nature at that) are in most serious error, and are very unjust, if not a source of danger, to their patients. It is not the real, intrinsic nature of the provocative agent which is important. It is the importance, real or imagined, to the patient, which counts. It is his estimation of its significance, the value he attaches to it, the attention he devotes to it, the part it plays or which he makes it play in his life, the attitude he assumes toward it—it is this which concerns us here. What does it mean to the patient? What role does it play in his life? How does he look upon it?

Dejerine and Gauckler give the following values to the various emotional causes responsible for the psychoneuroses: preoccupations of a physical nature, 27 per cent; affective preoccupations, 24 per cent; sexual preoccupations, 22 per cent; scruples of all kinds, 14 per cent; material preoccupations, 13 per cent. "If we believe our personal experience," Dejerine and Gauckler say, "a man thinks a great deal about his health, and a great deal about his affections, and a great deal about his sexual life. The material questions of life occupy him less."² In each new case it is, of course, necessary to search for the probable factor or factors which were the true inciters of the psychoneurotic reaction. Somatic factors, real or imagined, hold the foremost position in the category of direct, accidental, etiological factors.

Overwork, physical or intellectual, which is so frequently blamed for the production of these conditions, is not, *per se*, a direct etiological agent. Emotion, anxiety, worry, added to overwork, is efficient in arousing a psychopathic reaction. But pure, unemotional overwork, unaccompanied by worry, does not excite such types of reaction.

This applies to fatigue and exhaustion from any cause—work or disease.

But, although such debilitating influences do not of themselves bring on the psychoneuroses, they must not be relegated to the limbo of the unimportant, the neglected and the forgotten. Any condition which lowers the general level of bodily health stands in a fair way to lowering the general feeling of well being, of disturbing

²The Psychoneuroses and Their Treatment by Psychotherapy, p. 238. Translation by Jelliffe. Philadelphia, 1913.

the mental efficiency and equilibrium, of evoking undesirable psychic reactions. This mental reaction thus evoked depends upon two factors: 1. The psychophysical equilibrium being disturbed, the individual becomes more sensitive, more impressionable, more irritable, more emotional, more apt to display his psychic defects and mental inferiorities. 2. This condition may become a source of worry, anxiety and emotional upset to the person affected, just as any other somatic, physical condition may.

This debilitating influence may be of any sort—fatigue or exhaustion from physical or intellectual overwork, physiological epochs (menstruation, puberty, adolescence, pregnancy, puerperium, the climacterium or senium), intoxication from alcohol or other substances, ductless gland disorder (Graves' disease, adrenal insufficiency and the like), tuberculosis, diabetes, cardio-vascular-renal disease, hypertension, or other factors of a similar kind. They do not, however, directly produce the psychoneurosis. They make the individual or the mentality more vulnerable, more easily disordered or disintegrated.

We have therefore to consider, in the matter

of the causative factors in the psychoneuroses, the mental makeup of the patient under consideration, the situation with which he had to deal, and his state of general bodily health. The mental makeup or attitude is primary and essential, and it is this which plays the most important part in determining the form of the psychoneurosis. It is the weakness of mental synthesis, which is taken advantage of by the provocative or causative agents, and which permits the disclosure of the mental defects, in intensified, exaggerated form.

This basic mental groundwork is laid for the most part during the earlier years of life. One's heredity, plus the educative influences which have been brought to bear upon one during the course of one's life, especially in the earlier, formative period, is a dominant determinant of the type and severity of the psychoneurosis. This applies in particular to the more pronounced and chronic forms.

A description of the mentality, and an analysis of the genetic origin and evolution of the various psychoneurotic states were not intended to be included in this paper.

1517 South Kedzie avenue.

DANTE COULDN'T PUT THAT OVER TO-DAY



Courtesy of Mr. Bradley and the Chicago Daily News.

ILLINOIS MEDICAL JOURNAL

Published monthly by The Illinois State Medical Society, under the direction of the Publication Committee of the Council.

GENERAL OFFICERS 1914-15

PRESIDENT.....CHARLES W. LILLIE, East St. Louis
 PRESIDENT-ELECT.....WILLIAM L. NOBLE, Chicago
 FIRST VICE-PRESIDENT.....F. S. O'HARA, Springfield
 SECOND VICE-PRESIDENT.....H. P. BEIRNE, Quincy
 TREASURER.....A. J. MARKLEY, Belvidere
 SECRETARY.....W. H. GILMORE, Mt. Vernon
 (Ex-officio Clerk of the Council)

THE COUNCIL

District 1—EMIL WINDMUELLER, Woodstock.
 District 2—EDWIN S. GILLESPIE, Wenona.
 District 3—CLYDE D. PENCE, Chicago.
 District 4—AUGUST H. ARP, Moline.
 District 5—C. S. NELSON, Springfield.
 District 6—C. D. CENTER, Quincy.
 District 7—C. F. BURKHARDT, Effingham.
 District 8—E. B. COOLEY, Danville.
 District 9—FRANK C. SIBLEY, Carmi.

CLYDE D. PENCE, *Chairman*, 3338 Ogden Avenue.

Send original articles and all communications relating to advertisements and mailing list to Dr. Clyde D. Pence, Editor, 3338 Ogden Avenue.

Membership correspondence to Dr. W. H. Gilmore, Mt. Vernon, Ill.

Society proceedings and news items to Dr. Henry G. Ohls, *Managing Editor*, 227 Lawrence Avenue, Chicago.

Contributors will submit all copy for publication typewritten on standard size paper and double spaced. Copy not complying with this rule will be returned, if convenient.

OCTOBER, 1915

Editorials

PAPERS OF ALIENISTS AND NEUROLOGISTS.

This number of the JOURNAL is given over to the papers read before the meeting of alienists and neurologists, held in Chicago in July. Unfortunately, we could not publish all of the papers read at this convention for lack of space. Not a paper was read which was not worthy of publication.

The field of endeavor covered by these meetings is one of large dimensions and great fertility. Today in Chicago a boy of twenty-one barely escaped the gallows and drew a sentence of life imprisonment for murder. A number of psychologists testified that he had the mentality of a child of six or seven years.

This society aims at the prevention of such murders by caring for those imbecilic persons, who may and are likely to commit just such crimes. It is the aim of this society to educate the people so that they may see the great crime of permitting such degenerates to reproduce their kind, thus burdening society with the care of the unfit.

Next year we hope to be able to publish the entire transactions, as was done last year. This should be done, as much of this work is new and is not published elsewhere. Encouragement should be given to those who are endeavoring to clear society of the mental degenerate.

NOTICE.

The attention of the membership is called to two important changes which were made in the by-laws at the last meeting of the House of Delegates.

In the future no member will be entitled to medical defense by the state society unless he holds receipt for dues on the blank furnished to the secretaries of the component societies by the general secretary. These blanks will be in the hands of the local secretaries by November 15 and must be used in 1916.

All members in arrears for 1915 will be dropped from the roll on Dec. 31, 1915, without further notice. If you are not sure that your dues for 1915 have been paid, take the matter up with your secretary at once and see that you are in good standing.

Copies of the new constitution and by-laws will be sent to each component society about November 1, and every member should procure a copy as soon thereafter as possible.

W. H. GILMORE,
 Secretary.

SOCIETY WORK FOR THE YEAR.

Beginning with this month the majority of the medical societies start anew the society work for the year. Vacation time is over for the most of us, and it is to be hoped that every member has had his vacation, also that he has enjoyed it thoroughly, and that he now comes back feeling equal to the many hard tasks that will fall to him during the coming season.

It is also to be hoped that each member will take a more active interest in his medical society than he did last year or the year before last, and that he will not only attend the society meetings, but that he will also fill a place frequently on the programs. Every member owes it to both himself and to the profession to do this; furthermore, nothing will pay better.

There seems to be more activity in a majority of the societies than is usual and for that reason

we predict a strong society for this year. Next month we expect to publish a report of the work of each member of the last legislature, so far as medical bills were concerned. Each member and each society should take notice of this report and, further, should compare it with the pre-election promises of those legislators. Incidentally, it would help the profession if our members would explain matters plainly to members of the legislature and that is work worth your while.

Let us ask once more that you attend your society meetings regularly. Do not let the officers do all the work. Do not put your officers under the painful necessity of apologizing for small attendances. Help your secretary by cheerfully reading papers and thus make the county society programs always interesting. This means some work for you, but why shirk it? You do not shirk your other work.

Show your loyalty to your society. Your patients will have just a little more faith in you if they know you are a live wire and that you know what the other members of the profession are doing.

ACTIONS FOR CIVIL MALPRACTICE. (*Thirteenth Article*)

ROBERT J. FOLONIE, L. L. B.,
CHICAGO.

One of the inducing causes of a considerable number of actions for malpractice lies in the insanity of the patient. The frequency with which delusions of the patient of an insane character promote such claims can only be realized by those in constant touch with cases of this kind.

In the case of Dr. D., patient who had been an inmate of an insane asylum submitted herself to the physician for treatment of physical ailments. He also treated her child and the recovery of both was uneventful. More than a year after attendance had ceased, suits were commenced upon claim of malicious mistreatment of the mother and child by the physician.

Claim was made that medicines were administered, intended to make them ill, and this was done maliciously and with intention to cause injury. An investigation disclosed previous incarceration of the mother in an asylum and formed a premise for the hypothesis that the suit was incited by insane delusions. The attorney

who had the claims in charge was taken into confidence, but refused at first to credit the assumption that claims were baseless or that his client was insane. Upon being pressed, he called his client into his office and a lengthy interview with her was had and she was drawn out respecting her troubles and made assertions so impossible of truth that her own attorney became convinced that her entire claims were the result of her insane delusions and he dismissed both cases.

In another case still pending the unusual situation is presented of a mildly insane patient who has had a dozen physicians examine her supposed injuries; upon each finding nothing to support the claims he is promptly accused of being in the hire of the physician against whom the claim of malpractice is made. The case is complicated by the fact that the attorney representing the client is notoriously unbalanced and his claims are so ludicrous that if asserted in court they would fall of their own weight.

The doctor in the meantime is subjected to this suit, and the attendant notoriety and injury to him is extreme.

In the case of Dr. B., he was arrested for mayhem, and also sued civilly for damages for removing the ovaries of his patient without her consent. Upon the trial of the criminal case, patient mentioned six prominent surgeons who, according to her story, had examined her and pronounced the operation upon her shameful, that each found the absence of the ovaries and each condemned the operating surgeon.

None of the surgeons whose names were mentioned by her had ever treated her or examined her, nor expressed the opinions mentioned by her. The ovaries had not in fact been removed and there was no explanation of her weird story except on the hypothesis of insane delusions. The civil suit was finally abandoned after ineffectual efforts to force the physician to settlement.

TUBERCULOSIS NOTES.

According to reports, physicians (of a certain type) are still examining patients without baring upper part of the body.

Dry tuberculosis dust is probably the main vehicle of infection.

Practically all children become infected with tuberculosis, but the greater per cent develop an immunity toward the disease.

Sanitaria should refuse to accept hopeless cases and some of the laity's prejudice against them would disappear.

Eighty-six per cent of all cases of tuberculosis meningitis are in children breast-fed.

Most cases of tuberculous meningitis follow a previous attack of measles, relationship not clear.

Emetine, given hypodermatically, is doing good service in pulmonary hemorrhages.

The National Association for the Study and Prevention of Tuberculosis advises against sending anyone west who has not at least \$1,000.00 to spend; also states that tuberculosis can be cured anywhere.

CENTRAL STATES CONFERENCE ON SOCIAL HYGIENE.

A conference will be held under the auspices of the Central States Division, American Social Hygiene Association in the Florentine Room of the Congress Hotel, Oct. 25-26, 1915.

The first session of the conference will be held in the evening of October 25th, and will be given over to discussions of general features of the social hygiene movement. In the forenoon of the following day, the moral and educational features of the social hygiene movement will be taken up; in the afternoon, the medical and public health aspects will be treated; the evening session will be given over to discussions of the legal and administrative phases.

All persons interested in any phase whatever of the social hygiene movement are invited and urged to attend the conference. The field secretary of the Central States Division is glad to give information regarding the conference. Address 1949 Peoples Gas building, Chicago, Ill.

FOOT AND MOUTH DISEASE.

The following is the status of the work performed in eradicating foot and mouth disease in the state of Illinois to date of Oct. 2, 1915, as reported to the Chicago Department of Health:

Counties infected	10
Number of herds.....	289
Total number animals.....	11,000
Herds slaughtered	286
Herds to be slaughtered.....	3
Infected premises	225
Premises disinfected	220
Premises to be disinfected.....	5

Of the above, approximately 148 herds infected have

been in Lake and Cook counties, which are in the Chicago dairy district.

Nineteen additional herds were infected the week preceding October 2. All milk from the quarantined area is being pasteurized under the supervision of the department.

RESOLUTIONS OF STATE VETERINARIANS.

It is the unanimous opinion of the undersigned state veterinarians from the states of New York, Pennsylvania, Kentucky, Indiana, Maryland and Iowa, who are assembled in Chicago, Illinois, in convention, for the purpose of deliberating upon the critical emergency which has arisen in the livestock industry by reason of the alarming spread of the foot and mouth disease in the state of Illinois, that the best method for eradicating the foot and mouth disease is the appraisal and slaughter method adopted and used by the Bureau of Animal Industry, United States Department of Agriculture, in the 23 states which have recently been infected and from which the disease has been eradicated, with the exception of the state of Illinois, where this method has been interfered with.

The injunction proceedings resorted to in two instances in the state of Illinois have seriously interfered with the work of eradication and have been largely responsible for the embargoes placed by other states against the livestock of the state of Illinois, which embargoes will continue to exist so long as such injunction proceedings preventing the slaughter and appraisal of diseased herds are resorted to.

These state embargoes are necessary to protect the livestock interests of other states, and are causing daily losses to the livestock interests far in excess of the value of any individual herd. Public sentiment in all these states is demanding that embargoes be placed against the livestock of the state of Illinois, for any and all purposes, and this sentiment will so continue until the disease is eradicated from the state of Illinois.

The experience in foreign countries and our experience with previous outbreaks in the United States disproves to us that it is practicable to treat animals infected with foot and mouth disease. They should be destroyed at the earliest possible moment and the premises thoroughly cleaned and disinfected to prevent the spread of this disease. As all attempts in other countries to control the foot and mouth disease by quarantine measures without slaughter has resulted in the permanent infection of such territory, we earnestly suggest and request that all diseased herds be destroyed forthwith, and the premises cleaned and disinfected for the good of the live stock interests of the state of Illinois and the country at large.

(Signed) DR. C. J. MARSHALL, Pennsylvania,
DR. J. I. GIBSON, Iowa,
DR. J. G. WILLS, New York,
DR. S. F. MUSSELMAN, Kentucky,
DR. A. F. NELSON, Indiana,
DR. L. HICKMAN, Maryland.

EXAMINATIONS FOR ASSISTANT SURGEON U. S. P. H. SERVICE.

Boards will be convened in the Marine Hospitals at Chicago and elsewhere, Monday, November 1, 1915 at 10 a. m., for the examination of candidates for admission to the grade of assistant surgeon in the Public Health Service.

For invitation to appear before the board of examiners, address "Surgeon-General" Public Health Service, Washington, D. C.

STATE BOARD EXAMINATIONS.

Dr. C. St. Clair Drake, secretary of the Illinois State Board of Health, reports the results of the examinations held in Chicago, June 24-26, 1915. The total number of candidates examined was 200, of whom 177 passed, 19 failed and 4 did not complete the examination.

PASSED.		Total No.
College—	Year of Grad.	Passed.
Bennett	(1913, 1) (1914, 3) (1915, 21)	25
Catholic University of Louvain, Belgium....	(1895)	1
Chicago College of M. & S.....	(1914, 2) (1915, 26)	28
Hahnemann, Chicago....	(1914, 1) 1914, 1) (1915, 9)	11
Harvard	(1912, 1) (1913, 1)	2
Jenner	(1915)	11
John A. Creighton.....	(1911)	1
Meharry	(1915)	2
Northwestern	(1914, 1) (1915, 2)	13
Rush	(1914, 1) (1915, 29)	30
St. Louis University.....	(1915)	2
University of Illinois....	(1910, 1) (1912, 1) (1915, 45)	47
University of Louisville.....	(1915)	1
University of Maryland.....	(1915)	1
University of Minnesota.....	(1893)	1
Washington University, St. Louis.....	(1915)	1
		177
FAILED.		Total No.
College—	Year of Grad.	Failed.
Bennett	(1914, 1) (1914, 2) (1915, 3)	6
Chicago Coll. M. & S....	(1914, 1) (1914, 1) (1915, 3)	5
Chicago Hosp. Coll. of Medicine.....	(1915)	1
Hahnemann, Chicago.....	(1915)	2
National, Chicago.....	(1909)	1
National, St. Louis.....	(1914)	1
University of Illinois.....	(1913, 1) (1915, 1)	2
University of Pennsylvania.....	(1896)	1
		19

CIVIL SERVICE POSITIONS.

The following examinations for positions in the Cook County service have been announced:

JUNIOR PHYSICIAN—T. B. (557)—Male and Female—Class A, Rank 2, Grade 4. Pay \$125.00 month and maintenance. To be held 2 p. m. October 27, 1915. Junior physicians are required to live at the Oak Forest Infirmary; to examine, diagnose and give medical or surgical treatment to tubercular patients in all stages of the disease; to instruct nurses in the care of the inmates and in the preparation of standing diets and special diets.

EXAMINATION REQUIREMENTS.

Medical school education and experience in institutional work as an interne, or as member of medical staff, is valuable. Service in dispensaries or in general or special practice is desirable.

Splendid opportunity to gain valuable experience in tubercular diseases. First-class laboratory in connection with the institution for the purpose of research work in this branch of medicine. This infirmary is a high-class, modern institution, with excellent living quarters apart from the institution provided for officials.

The scope of the examination will be: Special subject, weight 6; experience, weight 4.

RESIDENT PATHOLOGIST (558)—Male and Female—Class A, Rank 3, Grade 1. Pay \$150.00 month and maintenance. To be held 2 p. m. October 29, 1915. The duties of this position involve responsible charge of the pathological, biological and bacteriological work at a hospital or institution, the checking of post-mortem findings and diagnoses, attendance at autopsies, and the accountability for the work of assistants.

EXAMINATION REQUIREMENTS.

The nature of the position requires the applicant to be a graduate of a recognized medical school, and makes laboratory training and original research work advantageous.

The scope of the examination will be: Special subject, weight 5; experience, weight 3; practical, weight 2.

HEAD ATTENDING NURSE—JUVENILE DETENTION HOME—(556)—Female—Class B, Rank 3, Grade 4. Pay \$75.00 per month and maintenance. To be held 2 p. m., October 22, 1915. The duties of this position involve responsible charge of the storeroom of the Juvenile Detention Home, the receiving and distribution of supplies and the keeping of necessary records in connection therewith; also responsibility for the general household management of the Juvenile Detention Home and supervision over employes assigned to assist in the housekeeping department of the institution; and also some supervision of the work of the Attending Nurses at the said institution, under the general direction of the Superintendent and the head physician.

EXAMINATION REQUIREMENTS.

The nature of the work requires familiarity with the care of sick children, and makes experience in hospitals or charitable institutions for children, involving the supervision of employes, advantageous. The scope of the examination will be: Special subject, weight 5; experience, weight 3; oral, weight 2.

Sanitaria should refuse to accept hopeless cases and some of the laity's prejudice against them would disappear.

Eighty-six per cent of all cases of tuberculosis meningitis are in children breast-fed.

Most cases of tuberculous meningitis follow a previous attack of measles, relationship not clear.

Emetine, given hypodermatically, is doing good service in pulmonary hemorrhages.

The National Association for the Study and Prevention of Tuberculosis advises against sending anyone west who has not at least \$1,000.00 to spend; also states that tuberculosis can be cured anywhere.

CENTRAL STATES CONFERENCE ON SOCIAL HYGIENE.

A conference will be held under the auspices of the Central States Division, American Social Hygiene Association in the Florentine Room of the Congress Hotel, Oct. 25-26, 1915.

The first session of the conference will be held in the evening of October 25th, and will be given over to discussions of general features of the social hygiene movement. In the forenoon of the following day, the moral and educational features of the social hygiene movement will be taken up; in the afternoon, the medical and public health aspects will be treated; the evening session will be given over to discussions of the legal and administrative phases.

All persons interested in any phase whatever of the social hygiene movement are invited and urged to attend the conference. The field secretary of the Central States Division is glad to give information regarding the conference. Address 1949 Peoples Gas building, Chicago, Ill.

FOOT AND MOUTH DISEASE.

The following is the status of the work performed in eradicating foot and mouth disease in the state of Illinois to date of Oct. 2, 1915, as reported to the Chicago Department of Health:

Counties infected	10
Number of herds.....	289
Total number animals.....	11,000
Herds slaughtered	286
Herds to be slaughtered.....	3
Infected premises	225
Premises disinfected	220
Premises to be disinfected.....	5

Of the above, approximately 148 herds infected have

been in Lake and Cook counties, which are in the Chicago dairy district.

Nineteen additional herds were infected the week preceding October 2. All milk from the quarantined area is being pasteurized under the supervision of the department.

RESOLUTIONS OF STATE VETERINARIANS.

It is the unanimous opinion of the undersigned state veterinarians from the states of New York, Pennsylvania, Kentucky, Indiana, Maryland and Iowa, who are assembled in Chicago, Illinois, in convention, for the purpose of deliberating upon the critical emergency which has arisen in the livestock industry by reason of the alarming spread of the foot and mouth disease in the state of Illinois, that the best method for eradicating the foot and mouth disease is the appraisal and slaughter method adopted and used by the Bureau of Animal Industry, United States Department of Agriculture, in the 23 states which have recently been infected and from which the disease has been eradicated, with the exception of the state of Illinois, where this method has been interfered with.

The injunction proceedings resorted to in two instances in the state of Illinois have seriously interfered with the work of eradication and have been largely responsible for the embargoes placed by other states against the livestock of the state of Illinois, which embargoes will continue to exist so long as such injunction proceedings preventing the slaughter and appraisal of diseased herds are resorted to.

These state embargoes are necessary to protect the livestock interests of other states, and are causing daily losses to the livestock interests far in excess of the value of any individual herd. Public sentiment in all these states is demanding that embargoes be placed against the livestock of the state of Illinois, for any and all purposes, and this sentiment will so continue until the disease is eradicated from the state of Illinois.

The experience in foreign countries and our experience with previous outbreaks in the United States disproves to us that it is practicable to treat animals infected with foot and mouth disease. They should be destroyed at the earliest possible moment and the premises thoroughly cleaned and disinfected to prevent the spread of this disease. As all attempts in other countries to control the foot and mouth disease by quarantine measures without slaughter has resulted in the permanent infection of such territory, we earnestly suggest and request that all diseased herds be destroyed forthwith, and the premises cleaned and disinfected for the good of the live stock interests of the state of Illinois and the country at large.

(Signed) DR. C. J. MARSHALL, Pennsylvania,
DR. J. I. GIBSON, Iowa,
DR. J. G. WILLS, New York,
DR. S. F. MUSSELMAN, Kentucky,
DR. A. F. NELSON, Indiana,
DR. L. HICKMAN, Maryland.

EXAMINATIONS FOR ASSISTANT SURGEON U. S. P. H. SERVICE.

Boards will be convened in the Marine Hospitals at Chicago and elsewhere, Monday, November 1, 1915 at 10 a. m., for the examination of candidates for admission to the grade of assistant surgeon in the Public Health Service.

For invitation to appear before the board of examiners, address "Surgeon-General" Public Health Service, Washington, D. C.

STATE BOARD EXAMINATIONS.

Dr. C. St. Clair Drake, secretary of the Illinois State Board of Health, reports the results of the examinations held in Chicago, June 24-26, 1915. The total number of candidates examined was 200, of whom 177 passed, 19 failed and 4 did not complete the examination.

PASSED.

College—	Year of Grad.	Total No. Passed.
Bennett	(1913, 1) (1914, 3) (1915, 21)	25
Catholic University of Louvain, Belgium....	(1895)	1
Chicago College of M. & S.....	(1914, 2) (1915, 26)	28
Hahnemann, Chicago....	(1914, 1) 1914, 1) (1915, 9)	11
Harvard	(1912, 1) (1913, 1)	2
Jenner	(1915)	11
John A. Creighton.....	(1911)	1
Meharry	(1915)	2
Northwestern	(1914, 1) (1915, 2)	13
Rush	(1914, 1) (1915, 29)	30
St. Louis University.....	(1915)	2
University of Illinois..	(1910, 1) (1912, 1) (1915, 45)	47
University of Louisville.....	(1915)	1
University of Maryland.....	(1915)	1
University of Minnesota.....	(1893)	1
Washington University, St. Louis.....	(1915)	1
		177

FAILED.

College—	Year of Grad.	Total No. Failed.
Bennett	(1914, 1) (1914, 2) (1915, 3)	6
Chicago Coll. M. & S.....	(1914, 1) (1914, 1) (1915, 3)	5
Chicago Hosp. Coll. of Medicine.....	(1915)	1
Hahnemann, Chicago.....	(1915)	2
National, Chicago.....	(1909)	1
National, St. Louis.....	(1914)	1
University of Illinois.....	(1913, 1) (1915, 1)	2
University of Pennsylvania.....	(1896)	1
		19

CIVIL SERVICE POSITIONS.

The following examinations for positions in the Cook County service have been announced:

JUNIOR PHYSICIAN—T. B. (557)—Male and Female—Class A, Rank 2, Grade 4. Pay \$125.00 month and maintenance. To be held 2 p. m. October 27, 1915. Junior physicians are required to live at the Oak Forest Infirmary; to examine, diagnose and give medical or surgical treatment to tubercular patients in all stages of the disease; to instruct nurses in the care of the inmates and in the preparation of standing diets and special diets.

EXAMINATION REQUIREMENTS.

Medical school education and experience in institutional work as an interne, or as member of medical staff, is valuable. Service in dispensaries or in general or special practice is desirable.

Splendid opportunity to gain valuable experience in tubercular diseases. First-class laboratory in connection with the institution for the purpose of research work in this branch of medicine. This infirmary is a high-class, modern institution, with excellent living quarters apart from the institution provided for officials.

The scope of the examination will be: Special subject, weight 6; experience, weight 4.

RESIDENT PATHOLOGIST (558)—Male and Female—Class A, Rank 3, Grade 1. Pay \$150.00 month and maintenance. To be held 2 p. m. October 29, 1915. The duties of this position involve responsible charge of the pathological, biological and bacteriological work at a hospital or institution, the checking of post-mortem findings and diagnoses, attendance at autopsies, and the accountability for the work of assistants.

EXAMINATION REQUIREMENTS.

The nature of the position requires the applicant to be a graduate of a recognized medical school, and makes laboratory training and original research work advantageous.

The scope of the examination will be: Special subject, weight 5; experience, weight 3; practical, weight 2.

HEAD ATTENDING NURSE—JUVENILE DETENTION HOME—(556)—Female—Class B, Rank 3, Grade 4. Pay \$75.00 per month and maintenance. To be held 2 p. m., October 22, 1915. The duties of this position involve responsible charge of the storeroom of the Juvenile Detention Home, the receiving and distribution of supplies and the keeping of necessary records in connection therewith; also responsibility for the general household management of the Juvenile Detention Home and supervision over employees assigned to assist in the housekeeping department of the institution; and also some supervision of the work of the Attending Nurses at the said institution, under the general direction of the Superintendent and the head physician.

EXAMINATION REQUIREMENTS.

The nature of the work requires familiarity with the care of sick children, and makes experience in hospitals or charitable institutions for children, involving the supervision of employees, advantageous. The scope of the examination will be: Special subject, weight 5; experience, weight 3; oral, weight 2.

Public Health

TYPHOID FEVER AND TYPHOID "CARRIERS"

RULES AND REGULATIONS OF THE ILLINOIS STATE BOARD
OF HEALTH PERTAINING TO REPORTING CASES,
PLACARDING, QUARANTINE, DISINFEC-
TION, BURIAL OF DEAD, ETC.

IN FORCE THROUGHOUT ILLINOIS ON AND AFTER FEBRUARY
16, 1915.

The following rules and regulations for the control of cases of typhoid fever and of persons exposed thereto, and of "typhoid carriers" must be enforced by local health authorities. Health and other officials who fail to enforce these rules and all persons who violate them subject themselves to a fine not to exceed \$200 for each offense or imprisonment in the county jail or both.

1. *Reports.* Every physician, attendant, parent, householder or other person having knowledge of a known or suspected case of typhoid fever or of a person known or suspected to be a "typhoid carrier" must immediately report the same to the local health authorities.

2. *Placarding.* Whenever a case of typhoid fever is reported to the local health authorities, they shall affix in a conspicuous place at the *outside entrance of the building*, house or flat, as the case may be, *where milk and other foodstuffs are received*, a red warning card, not less than 11x14 inches in size, on which shall be printed in black, with bold faced type, at least the following: "**TYPHOID FEVER HERE**" in type not less than 3½ inches in height, and "REMOVE NO MILK CONTAINERS, ETC.," in similar type not less than 2½ inches in height.

3. *Quarantine.* The patient should be confined to one well-ventilated room, screened against flies and other insects, and as remote as possible from other occupied rooms. The room should be stripped of draperies, carpets, upholstery and all furniture and articles not necessary for the comfort of the occupants. Visitors must not be permitted to enter the sick room or to come in contact with the attendants. Quarantine can be raised only by the local health authorities or by the State Board of Health.

4. *Other Inmates of the Infected Premises.* The other inmates of the infected premises, except the attendants, may go about their usual business. The attendants, upon leaving the premises, must take all precautions necessary to prevent the spread of the disease.

5. *Precautions.* No persons, except the necessary attendants, who, whenever possible, should be persons who have had typhoid fever, should come in contact with the patient. Attendants, who have not had typhoid fever, should, as a wise pre-

caution, be protected by an anti-typhoid vaccination. Attendants must not prepare or handle food for others than the patient and themselves and their intercourse with the other members of the family must be as restricted as possible. The patient and attendants are strictly prohibited from engaging in any work connected with the drawing, preparing, marketing or selling of foodstuffs, milk or milk products, including the washing or care of milk utensils or containers of any description.

An ample supply of towels, basins, water and a standard disinfectant should always be on hand for the disinfection of the hands of the attendants, and attendants should carefully disinfect their hands after each handling of the patient or of articles which may be infective.

Soiled body or bed clothing and handkerchiefs or cloths used to receive discharges from the patient should be immediately disinfected by boiling or by immersion in an approved disinfecting solution.

No article of body or bedclothes, handkerchiefs, or any other article from the sick room shall be taken to a public laundry unless any and all such articles have been properly disinfected by immersion in an approved disinfecting solution and permission shall have been granted by the local health authorities for such removal.

All knives, forks, spoons, glasses, cups and plates used by the patient or attendants must be immediately disinfected in a similar manner.

All discharges from bowels and bladder must be received in a vessel containing a liberal quantity of an approved disinfectant. Such disinfectant must be continued so long after the removal of the patient as the intestinal discharges continue to be more copious, liquid or frequent than natural. Discharges from the mouth and any vomit matter must be completed disinfected before disposed of.

The discharges should never be emptied on the ground or into a stream. After thorough disinfection they may be emptied in the sewerage system, or if no such system exists, as in rural districts, they should be buried at least one foot below the surface of the ground and not closer than 150 feet to any well or other source of water supply. If deposited in an outhouse, they must first be disinfected and the contents of the privy vault must be sprinkled daily with crude oil or kerosene, or other approved solution or substance, employed for the purpose of repelling flies.

Dogs, cats and other household pets must be excluded from the infected premises. Any such animals which have been in contact with the patient must be killed or subjected to a thorough disinfecting bath, and must not be permitted to enter the premises while the disease exists.

6. *Deliveries of Milk, Groceries and Other Necessities.* Milk, foodstuffs and other necessary supplies may be delivered at the infected premises, but there must be no contact of any kind between the delivery agents and the attendants or patient.

Milk may be delivered in bottles, only, and such bottles must not be taken from the infected premises during the existence thereon of the disease. Before they are removed from the premises after the death or recovery of the patient they must be sterilized under the direction of the local health authorities.

7. *Sale of Milk, Groceries and Provisions From Infected Premises Prohibited.* Whenever a case of typhoid fever exists on any premises where milk, groceries, vegetables or other foodstuffs are either produced, handled or sold, the sale, exchange or distribution in any manner whatsoever, or the removal from the infected premises of any milk, cream or other milk products, groceries, vegetables or other foodstuffs is strictly prohibited until the case has terminated by recovery, removal or death and the premises, its occupants, and all utensils have been thoroughly disinfected.

A person recovered from typhoid fever will not be permitted to engage in any manner in the handling or preparation of foodstuffs, milk or milk products, including the handling of milk containers, until one month after date of recovery and until after the intestinal discharges have ceased to be more copious, liquid or frequent than normal, or until such time as it has been ascertained that such person is in no danger of spreading the infection.

8. *Warnings and Investigations.* Upon the appearance of several cases of typhoid fever in a community, the development being simultaneous or nearly so, the mayor or village president shall issue a proclamation advising citizens to home pasteurize all milk and to boil all water before drinking. (Simple instructions for home pasteurization of milk will be furnished in pamphlet form by the State Board of Health upon request.)

In all such instances the local health authorities shall at once investigate the milk and other food supplies of the infected families with a view of determining the source of infection. If suspicion attaches to the milk or other food supply and the source of the infection appears to be in territory outside the jurisdiction of the local health authorities, or if the source of infection cannot be definitely determined, the State Board of Health shall be notified immediately.

9. *Removals.* No person affected with or suspected of being affected with typhoid fever shall be removed from the premises on which he resides when such diagnosis is made or opinion is given, unless consent of the local health authorities to such removal is obtained.

10. *Disinfection.* Upon the termination of quarantine the sick room and contents must be disinfected. The room must be thoroughly aired and all woodwork must be thoroughly scrubbed and the walls cleaned. The body and bed clothing and all articles coming in personal contact with the patient must be disinfected by boiling or by immersion in an approved disinfectant. Grossly soiled

articles which cannot be disinfected by the usual methods should be burned.

11. *Deaths and Burials.* In the event of death, the body must be wrapped in a sheet thoroughly soaked in an approved disinfectant and then placed in an air-tight coffin. The casket or coffin must not be opened in the presence of the public.

12. *Typhoid "Carriers."* Any person known to be or suspected of being a typhoid "carrier," and therefore capable of spreading typhoid infection, shall be treated as a typhoid patient, even though to all outward appearances such person must appear to be well, and shall be subject to the rules governing typhoid fever cases. Provided, however, that in order to meet conditions peculiar to individual cases, the State Board of Health, upon its own initiative or upon recommendation of the local health authorities, may modify or relax these rules.

INFORMATION.

Laboratory Tests Free. Specimens for WIDAL TESTS in case of suspected typhoid fever are examined free of charge at the laboratory of the State Board of Health at Springfield. Containers for mailing specimens can be obtained by physicians at any agency of the Board.

Anti-Typhoid Vaccine Free. Vaccine for the immunization of any resident of Illinois against typhoid fever is also supplied free of charge through the agencies of the Board. The local health authorities in person and through the press should urge all citizens who have not had typhoid fever to secure an anti-typhoid vaccination. It is an efficient preventive and the operation is simple and harmless.

How to Pasteurize Milk in the Home. In a tin pail of about eight inches in diameter and six or seven inches in height, place a saucer. On the saucer stand the bottle of milk, leaving the paper cap on the bottle, but perforating it slightly by piercing with a clean two-pronged fork. Now add enough lukewarm water to the pail to bring the top level of the water to a point about half-way up to the bottle and then place the pail and its contents on the stove for heating. Watch the water and the moment it begins to boil remove the bottle of milk from the pail and cool it as rapidly as possible, not forgetting, of course, the danger of breaking the bottle by too rapid cooling. Finally seal the perforations in cap and place the bottle in the ice box. The milk is now pasteurized. Always keep it in a cool, clean place.

Boil the Water When Its Purity Is in Doubt. Records show that much polluted water is served in Illinois, especially is this true of the Southern portion of the state. Well water taken from dug wells in close proximity to privies is always dangerous to drink. All water of doubtful quality should be boiled for twenty minutes before drinking. To make the water more palatable after boiling place in a *clean*, wide mouthed pail and stir or agitate

for a few minutes with a *clean* long handled spoon. Keep in sterile bottles, on ice. Never put ice *in* the water.

TYPHOID EPIDEMIC IN MENARD COUNTY TRACED TO POLLUTED WATER

CHAUTAUQUA GUESTS DRANK SANGAMON RIVER WATER.

Pronouncing the epidemic of typhoid fever now prevailing in Menard county of this state, one of the most serious and inexcusable that has come to his attention in twenty years of active public health work, Dr. C. St. Clair Drake, secretary of the Illinois State Board of Health, today issued the following statement, based upon the reports of the Board's experts, who now are in charge of the health affairs of the stricken county and several towns and villages.

At least one hundred and fifty persons, residents of Menard county and its immediate vicinity, have been stricken with typhoid fever since September 10. Thus far, six deaths have occurred.

All of these cases developed within ten days, practically simultaneously, the communities most seriously affected being Petersburg, 60 cases; Athens, 17 cases; Greenview, 8; Mason City, 5; Tollula, 3; the balance being distributed throughout the rural districts and other towns and cities, among the latter being Chicago and Peoria. More recently advice has been received of 15 cases in Lincoln.

On invitation of the Petersburg, Athens and Menard county authorities the State Board of Health assumed charge of the situation and immediately sent into the field its sanitary engineers, medical health officers, food inspectors and bacteriologist, for the purpose of determining the source of infection and to prevent the spread of the disease from the existing cases.

Investigations clearly establish the fact that every case is the result of drinking Sangamon river water, which is nothing less than dilute sewage. Every victim of the disease, excepting one, and he was in the habit of bathing in the Sangamon river, drank water from grossly polluted wells on the Chautauqua grounds at Petersburg.

The chautauqua wells were completed submerged by the flood waters of the Sangamon river during the last days of the chautauqua assembly, and notwithstanding this fact, which apparently was common knowledge, the pumps were continued in operation and many of the visitors continued to consume the polluted waters.

It is reported that the chautauqua authorities placed warning placards at the public service taps, advising visitors that the water was unfit for drinking purposes, but, apparently, this did not deter the thirsty for "taking a chance."

The reports in hand point conclusively to the

flooded wells on the chautauqua grounds as the source of infection.

Officers of the State Board of Health under the direction of Dr. St. Clair Drake are putting forth extraordinary efforts to prevent secondary infections.

STATE BOARD OF HEALTH NOTES.

The September bulletin of the Illinois State Board of Health presents twenty-three pages of excellent advice and information on tuberculosis written in popular style.

The matter therein contained has since been incorporated in a special tuberculosis pamphlet, an issue of 50,000 copies now being due from the printer.

This pamphlet is pronounced by those who have read it as the most valuable contribution to the anti-tuberculosis campaign that has appeared in Illinois in the last decade.

Copies can be secured on request addressed to Dr. C. St. Clair Drake, secretary of the Illinois State Board of Health, Springfield.

* * *

Strenuous efforts are being put forth by the Illinois State Board of Health to perfect arrangements for putting the new vital statistics law in operation on January 1, 1916.

The state has been divided into some 2,000 registration districts, the registration officials for each district have been designated, thirty-five different reporting and recording forms, books and circular letters of instruction have been prepared and printed matter to the number of 2,000,000 pieces has been ordered.

Evidently the task of putting this vitally important law in operation is one of no small proportion.

* * *

The popular public health exhibit of the Illinois State Board of Health will be a feature of the meeting of the Southern Illinois Medical Association at Harrisburg, November 4 and 5.

This exhibit is now on display at the Implement Show in Peoria.

EXAMINATION FOR DAIRY INSPECTOR.

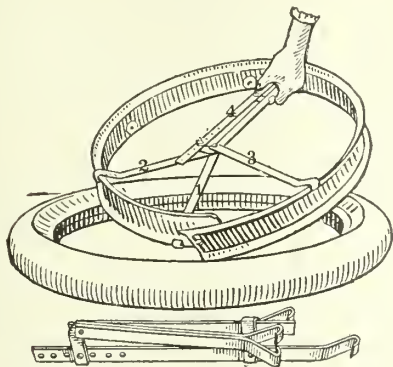
Competitive test for candidates for the position of dairy inspector held by the State Civil Service Commission on Saturday, November 6, 1915.

Salary, \$100 to \$150 a month. Open to men over 25 years. Scope and weights: Training and experience, 3; special subjects, covering inspection of preparation, manufacture and sale of farm dairy products, detection of adulterants and knowledge of health laws, 5. Oral examination, 2. Candidates making an average of 65 or more on the written portion will be assembled for an oral interview later.

(Continued on page 318)

Auto Sparks and Kicks

AUTOMOBILISTS' FRIEND—A RIM REMOVER.



Positive Remover for Split Rims.

Removes the rim from the tire—not the tire from the rim.

Split Rim Remover opens the rim lock, and contracts the rim, overlapping the ends, to permit immediate removal. Simply hook it to the rim of the wheel, push down the lever, and lift the rim from the casing. Does not spring the rim out of line, nor kink, grip, or bend it in any way. Weight, 3 pounds. Fits any size rim. Can be instantly folded to fit in the tool box.

Positive Supply Co., Davenport, Ia.

—*Motor World*.

AUTO-ISMS.

He jests at cars who never owned one.
The airless tire catches the puncture.
It's a long road that has no roadhouses.
A stop in time saves a fine.—*Motor Life*.

WHEN TO GET A NEW CAR.

The best evidence of wear is noise. It is noise, more than lack of power, that finally puts a car on the retired list. The first soft hum of the gears becomes a harsh grinding as the gear-teeth lose their correct form or become rough. The sewing-machine whirr of the valves begins to sound like a clatter. A softly muffled tap, tap, tap in the engine grows more insistent, till you acknowledge a knock. And sooner or later, faint rattling sounds in front and rear can be traced to little loosenesses of lamps, mudguards, radiator and bonnet, control pedals and brake-band

supports, which had seemed as fixed as the eternal hills.

Most of these noises, of course, can be corrected. Loose engine bearings can be taken up or the bushings replaced. New gears can be substituted for those worn, and the same can be done with ball or roller bearings. The replacement, in time, of all the principal wearing parts is expected and provided for in the design of the car, and there is no physical impossibility in keeping a car in service indefinitely by renewal or refitting of things that wear out. The practical difficulty is not with the principal wearing parts, but with the hundred and one minor parts, which wear out more slowly, but are more troublesome or costly to replace when worn. In time it simply does not pay. There is more fun in getting a new car with the latest frills.—*Country Gentleman*.

EFFECTS OF RIDING TIRES SOFT.

When the tires are ridden soft there is too much action in the side-wall, or hinge, which must eventually result in the same injury to the fabric that occurs to a wire when bent numerous times at a given point.

This excessive heating softens the rubber cement, or "frition," on the fabric carcass. In a sense devulcanization takes place. This, combined with an irregular tension of one layer of fabric in relation to another, develops a separation, chafing and ultimately a blowout. It might be well to mention that most of the advantage of a large tire is lost unless it is kept inflated properly, as otherwise it is only equivalent to the comparative air volume of a smaller size.

KEEPING VARNISH BRIGHT.

The varnish on a new car, or a car newly painted, is liable to become speckled if it is rained on. The application of a mixture of equal parts of raw linseed oil and malt vinegar, if vigorously rubbed in, will render the marks less noticeable.—*Exchange*.

TO CLEAN BRASS.

Mix one part Roche alum and sixteen parts water. The articles to be cleaned must be warmed, then rubbed with the mixture and finished with fine tripoli.

Society Proceedings

ADAMS COUNTY

Regular Meeting July, 1915.

The July meeting of the Adams County Medical Society was held at the Hotel Newcomb with seventeen members in attendance. The morning session was devoted to business. One of the most important matters discussed was "Advertisements in the ILLINOIS MEDICAL JOURNAL," special reference being made to Gray's Glycerine Tonic Compound. The councillor, Dr. C. D. Center, who was instructed to mention the matter to the council of the state society, stated that the council of pharmacy of the A. M. A. had given its findings of Gray's Glycerine Tonic Compound in the July 3rd issue of the Journal A. M. A.; accordingly, it is black listed in that journal, and will be in the ILLINOIS MEDICAL JOURNAL. He assured us the ad would be discontinued when the contract expires.

After lunch those present were addressed by Dr. C. D. Cantrell, president of McLean County Medical Society and secretary of the medico-legal committee of the state society. His subject was "Some of the duties of the medical profession to the public." It was a distinct change from the usual medical paper, and made each one of us wake up and wonder whether or not we had been guilty of mistreating our patients by making a hasty, careless diagnosis, or by simply handing out a few pills and sending them off with the statement, "Oh! you will be all right." The doctor also enlightened us on the medico-legal defense subject. Told us how to proceed when one of our members became involved in a malpractice suit, etc. We certainly felt very grateful to Dr. Cantrell for his visit, his paper and his information, and invited him to come again.

Annual Outing, August, 1915.

Every year, about the middle of August, the Adams County Medical Society holds its annual outing. For the last seven years it has been strictly a "stag affair." This year the entertainment committee, consisting of Drs. H. P. Beirne, R. J. Christie and A. M. Austin, planned a launch trip on the Mississippi River. All expenses were paid by the society. The party left the North Side Boat Club, Quincy, at 10 a. m., and reached their destination, Pleasant Colony, about one hour later. At noon an excellent chicken dinner was served, and the scraps were not very plentiful. The afternoon was spent in various ways: fishing, card playing, base ball, smoking, etc. About 6 o'clock everyone was ready to partake of the delicious fish supper with iced watermelon for trimmings. The return trip was made by moonlight, and thus ended the day long to be remembered by those in attendance.

Regular Meeting September 13, 1915.

The first meeting of the fall was held on Monday, September 13, at the Hotel Newcomb. The minutes of the last three meetings were read and approved. The application of Dr. G. A. Lierle was read by the secretary and turned over to the Board of Censors.

As usual, lunch was partaken of in the hotel dining room.

The following scientific program was given in the afternoon:

"Symposium on Blood Pressure"

1. Physiology—circulation—Dr. J. Lenne Aleshire.
2. (a) Meaning of term tonus or blood pressure. (b) The sphygmomanometer. (c) Advantages and disadvantages of a few of the instruments in use at the present time.—Dr. E. B. Montgomery.
3. Normal blood pressure—men, women, children. Various factors which influence blood pressure normally.—Dr. J. W. E. Bitter.
4. Arterial-venous-capillary blood pressure. Systolic-diastolic pulse pressure.—Dr. E. L. Daddick.
5. Hypotension-etiology, effects, danger.—Dr. W. F. Pearce.
6. Arteriosclerosis-etiology.—Dr. W. W. Williams.

Each paper was thoroughly discussed, and many important points were brought out. This is only the beginning of a series of papers on this vast and important subject. Each month a few members will be asked to prepare a short paper on some phase of blood pressure. In this way we expect to cover the subject very thoroughly.

A very interesting case of aneurysm of the arch of the aorta was shown by Dr. H. P. Beirne. The patient was examined by the members present. Then discussion of the etiology, diagnosis, prognosis and treatment of this particular case was followed.

The matter of changing the meeting hour from 11 a. m. to 8:30 p. m. was brought up, and a motion made to try the same for six months (providing this did not interfere with the by-laws), seconded, carried.

However, the by-laws make it necessary for the secretary to notify each member ten days in advance of the meeting, at which final action is to be taken. Accordingly, final decision was deferred until the October meeting. We adjourned at 4 p. m.

ELIZABETH B. BALL,
Secretary.

CLARK COUNTY

The society enjoyed the second annual Fish Fry August 2, 1915, on the beautiful banks of the majestic Wabash. The doctors and their families to the number of about thirty people spent the day in an informal social way. It was the plan to convene in a scientific meeting at 10 a. m., but when we tried to settle down to deep thought and serious consideration of such an important subject as obstetrics, it was seen at once that pleasure and business could not go together, so the reading of the paper was postponed till the next meeting, which was set for 1 p. m. Thursday, September 30. The whole day we feasted, talked, played with the children, rowed in skiff, ferry-boat and gasoline launch; ate more watermelon, muskmelon, ice cream and channel cat; and at a late hour reluctantly "honked" and turned our faces homeward, thinking better of our colleague and his family than ever before.

L. J. WEIR,
Secretary.

IROQUOIS-FORD

The regular quarterly dinner and meeting of the Iroquois-Ford Medical Society was held at the New Gibson Hotel, Gibson City, Illinois, Tuesday afternoon, September 7, 1915.

The Iroquois-Ford Medical Society had tendered the McLean County Medical Society an invitation to be our guests at this meeting and they responded to the number of twenty-five. A most enjoyable time was had by all. After a sumptuous dinner and smoke the meeting was called to order by Dr. R. N. Lane, president of the Iroquois-Ford Medical Society.

Dr. Bruce H. Brown was elected to membership.

Petition for membership from Dr. F. M. Blome was presented and referred to the board of censors. All other routine business was omitted.

The meeting was favored by a paper by S. M. Wylie on "The New Treatment of Diabetes." Dr. Wylie being absent the paper was read by the secretary. The paper was discussed by Drs. Cantrell, Bath, DeFreis, Vandervort and others. Dr. E. P. Sloan then presented a paper on "Goiter," which was listened to with great interest by all present and was discussed by Drs. Cantrell, Bath, Kelso and others.

The McLean County visitors tendered a unanimous vote of thanks to the Iroquois-Ford Medical Society for the manner of their entertainment. On motion the chairman was instructed to appoint a committee of six to arrange for a joint picnic at some future date. Eighteen members present. Meeting adjourned.

D. W. MILLER,
Secretary.

MADISON COUNTY

The September meeting of the Madison County Medical Society on September 3, the first one ever held in Marine, was a success in every way. The day was perfect and the roads were fine, and you could see members coming in their motor cars from all directions, and although the location was in the extreme eastern portion of the county, thirty doctors were present to participate in the program, one of the best we have had for a long time.

An address of welcome by Dr. F. E. Glauner, of Marine, with a response by the president, Dr. Lay G. Burroughs, of Collinsville, started the proceedings. After a short business session, our state president, Dr. Chas. W. Lillie, was introduced and gave an address on "Relation of Civic Authorities to the Tuberculous Poor." He advocated a greater amount of supervision over this class of patients and a more liberal policy in aiding the indigent, declaring that it was to the economic advantage of the whole community to pursue this course.

Dr. Wm. Engelbach, of St. Louis, spoke on "Asthma" with special emphasis on etiology. He said that the success of the treatment in this oft-times obstinate affection depended wholly upon the proper classification as to cause. He dwelt at length upon the vaccine or serum treatment and said that this form of treatment was the most recent and gave the best results.

Dr. Percy H. Swablen, of St. Louis, followed with a lecture on "Obstetrics" with reference to abnormal conditions to be met in an obstetric practice. He cited many cases that had come under his observation that illustrated unusual conditions.

All of the above presentations were of a very high order of merit and commanded marked attention and the discussion was very interesting and enthusiastic, giving evidence of the appreciation with which all the addresses were received by those in attendance.

Our next meeting will be held in Edwardsville on October first.

E. W. FIEGENBAUM,
Secretary.

OGLE COUNTY

Ogle County Medical Society held its second quarterly meeting in the court house at Oregon, July 21, 1915. Owing to the absence of the president, Dr. Hanes presided over the meeting. Seventeen members and visitors were present.

After reading and disposal of the minutes, Dr. G. O. Edgar of Dixon read an interesting paper on "Non-Suppurative Diseases of the Ear." Discussion followed by Drs. Beveridge, Clark and Beebe, Dr. Edgar to close.

Dr. M. L. Karcher of Freeport read an able paper on "Ectopic Pregnancy." Discussion followed by Drs. Beveridge, Beebe and Murphy; closed by Dr. Karcher.

The following officers were unanimously elected for next year: President, Dr. L. M. Griffin, Polo; vice-president, Dr. A. H. Beebe, Stillman Valley; secretary-treasurer, Dr. J. T. Kretsinger, Leaf River; delegate, Dr. J. M. Beveridge, Oregon; alternate, Dr. W. E. Kittler, Richelle; censor, Dr. J. A. Johnson, Byron.

A vote of thanks was given Drs. Edgar and Karcher for their excellent papers, and to all others who united to make the meeting a success.

Nothing further to come before the meeting, the society adjourned to meet at Mount Morris the third Wednesday in October, 1915.

DR. J. L. KRETSINGER,
Secretary.

ST. CLAIR COUNTY

The regular monthly meeting of St. Clair County Medical Society was held Thursday, June 3, 1915. The following program was carried out:

Leading topic, "Gonorrheal Infection."

Papers: "Vesiculitis Seminales, Radiograms and Anatomical Section," Drs. Walter Wilhelmj and A. B. McQuillan. "Treatment of Gonorrhea," H. A. Cables. "Gonorrheal Sterility," E. P. Raab. "Ophthalmia Neonatorum," F. E. Auten. "Microscopic Exhibit," Drs. Zimmerman and Evans.

Regular Meeting, Sept. 9, 1915.

The St. Clair County Medical Society held its first meeting of the season of 1915-16 at the Elks' Hall on Thursday, September 9, with forty members present, and Dr. R. L. Campbell, president, in the chair.

The program for this occasion was "Syphilitic Infection."

Affections of Skin and Bone, E. H. Bottom; Affections of the Ear, Nose and Throat, G. C. Otrich; Affections of Eyes, J. C. Gunn; The Wassermann Test, F. H. Gunn, 606, Royal Tharp; Treatment, Medical and Hygienic, J. H. Fulgham.

The papers were well received and elicited hearty discussion, the Wassermann Test and "606" receiving their full share of attention.

Three applications for membership were received.

The successful inauguration of the "monthly" meeting only proves the contentions of its advocates who have claimed that more frequent meetings in county societies would not only tend to increase the membership, but would also add much to the interest in scientific subjects.

Adjourned to meet October 7.

C. W. LILLIE,
Reporter.

VERMILION COUNTY

The Vermilion County Medical Society met in the city council chamber, Danville, at 3:30 p. m., Sept. 16, 1915, and was called to order by President Jones.

The reading of the minutes of the June meeting was dispensed with, as this was a joint meeting with the Champaign County Society.

Communication was read from the Fountain-Warren County, Indiana, Medical Society in which Dr. R. J. Williams of Pence, Ind., was given permission to join our society. On ballot, Dr. Williams was elected to membership. The applications of Dr. E. B. Tate and Dr. L. L. Steiner were read and referred to the board of censors.

Bills aggregating \$19.85 were read and, on motion, were allowed.

This being a joint meeting with the Champaign County Society, the program was given jointly. The afternoon program consisted of papers by Dr. H. M. Greaves of Sidney on "Haematuria," Dr. T. J. McKinney of Champaign on "Osteomyelitis," and Dr. R. L. Hatfield of Danville on "Surgery of the Upper Abdomen." The papers were very interesting and a lively discussion followed.

Champaign County showed their loyalty and enthusiasm in their attendance, twenty-three being present, and in their interest in the discussion of papers. An equal number of Vermilion County members were present at the afternoon session. At 6 o'clock the meeting adjourned to the Elks' Club, where dinner was served at 6:30. Plates were laid for seventy—twenty-three members being present from Champaign County and forty-seven from Vermilion County.

After dinner a paper was read by Dr. Robt. McCaughey, of Hoopston, on "Some of the Commoner Affections of the Gastro-Intestinal Tract and Some Practical Suggestions in their Management." This was declared to be Dr. McCaughey's best paper to the society, and we, who know him, know that is saying a great deal. Along with Woodbury's cigars, it was

greatly enjoyed, and a very extensive discussion followed.

The meeting adjourned at 9 o'clock and the Champaign fellows were bidden God's speed as they took the interurban for home. All declared this the best gathering of its kind ever held, and the Champaign bunch assure us that there will be a repetition of the same.

O. H. CHRIST,
Secretary.

Personals

Dr. George W. Brock has resigned as physician to the State Penitentiary, Joliet.

Dr. Ed M. Irwin, Belleville, has been appointed local surgeon for the Southern Railway.

Dr. J. Forrest Bell, Elgin, was knocked down and seriously injured by a bicyele September 15.

Dr. Thomas J. Williams has returned after eight months' service in war hospitals in England.

Dr. Wm. H. Bishop and family of St. Charles have returned from six weeks trip to the Pacific coast.

Dr. Sydney Walker, Jr., has returned after four months' service with the British forces in Flanders.

Dr. A. M. Corwin, has been appointed a member of the editorial board of *Chicago Medical Recorder*.

Dr. Charles O. Nelms has been appointed local surgeon for the Illinois Central Railroad at Herseher.

Dr. Herman C. W. Gresens was seriously bruised in a collision between automobiles, September 16.

Dr. J. N. Swan, Monmouth, has been appointed professor of chemistry in the University of Mississippi.

Dr. James Archibald, Breese, has started for Europe, where he expects to work with the American Red Cross.

Dr. James W. Walker is in charge of a voluntary aid detachment hospital for wounded soldiers in Kent, England.

Dr. Harry S. Seiwel, medical director of the Alton State Hospital, has been transferred at his own request to the Watertown State Hospital.

Dr. George K. Harris, Vienna, has resigned as

superintendent of the Chester State Hospital and Dr. Jerome L. Harrel, Norris City, has been appointed his successor.

Dr. Frank A. Stubblefield, Jacksonville, for twelve years a member of the staff of the Jacksonville State Hospital, has been appointed medical director of the new Alton State Hospital.

News Notes

—The Lake County Fair has been abandoned on account of the prevalence of foot and mouth disease.

—An automobile belonging to Dr. Edwin O. Gable, of Chicago, was recently commandeered by thieves, who proceeded to hold up a druggist.

—On account of an epidemic of diphtheria in DuQuoin, the mayor has issued a proclamation forbidding children under 16 to attend picture shows, churches or public gatherings.

—The State Hospitals Medical Association of the State Hospitals of Illinois, announces their next meeting at the Elgin State Hospital, October 28-29, 1915. All physicians are cordially invited.

—Dr. John Dill Robertson, commissioner of health, has detailed a sanitary inspector to each of the more important police stations, with instructions to operate directly from these stations instead of from the city hall.

—The State Board of Administration has undertaken the task of the inspection of maternity hospitals and has been in conference with Dr. C. St. Clair Drake, secretary of the State Board of Health, regarding the fixing of standards for these institutions. After this has been arranged, a systematic inspection of institutions of this source will be undertaken.

—The superintendents of the state hospitals and the institution for the feeble-minded at Lincoln, have been directed by the State Board of Administration to take a course of instruction at the Psychopathic Institute, Kankakee. Dr. George A. Zeller, Springfield, alienist of the board, is arranging the details and is making the necessary schedule of instruction periods.

Marriages

ELTON A. CHLOUPEK, M. D., to Miss Emma Shaw, both of Chicago, recently.

JOHN HENRY RICE, M. D., Quincy, Ill., to Miss Leonora Welsh of St. Louis, August 24.

THEODORE CHARLES RIEBE, M. D., Chicago, to Miss Emily Gabrial of Elgin, Ill., August 14.

WILLARD WOODARD DICKER, M. D., to Miss Mary C. Wright, both of Oak Park, Ill., August 14.

LOUIS BIRSNER, M. D., Belleville, Ill., to Miss Gertrude Hinch of Ste. Genevieve, Mo., August 15.

CLARENCE TYLER ROOME, M. D., Evanston, Ill., to Miss Elizabeth Todd of Westfield, N. J., September 8.

JOHN P. O'NEILL, M. D., Highland Park, Ill., to Miss Katherine C. Joyce of Pittsburgh, Pa., September 1.

ALICE DODGE WILLIAMS, M. D., and Marie Albert Guenard, Baron DuVivier, both of Chicago, September 4.

Deaths

IDA MAE WRIGHT, M. D. Hahnemann Medical College 1911; aged 43; died at her home at Evanston, Ill., August 5.

THOMAS S. HUFFAKER, M. D. Hahnemann Medical College, Chicago, 1884; aged 57; died at his home in Chicago, August 20, from cerebral hemorrhage.

JAMES FRED MCBRIDE, M. D. Jefferson Medical College, 1909; aged 30; of Sterling, Ill.; was killed in an automobile accident at Sterling, August 21.

EDWARD ORLANDO ELLISON, M. D. Rush Medical College, 1915; an interne in Cook County Hospital, Chicago; aged 26; was accidentally drowned while swimming in Mouse river, Minot, N. D., where he was spending his vacation.

HARRY A. EVANS, M. D. Chicago College of Medicine and Surgery, 1912; aged 28; of Springfield, Ill.; a member of the Illinois State Medical Society; died in Terre Haute, Ind., August 9.

COMFORT EDSON PECK, M. D. University of Buffalo, 1873; Bellevue Hospital Medical School, 1879; aged 69; for thirty years vice-president of the Bowman Dairy Company, Chicago; died at his home in Highland Park, Ill., September 2.

DANIEL B. MORY, M. D. Medical College of Ohio, Cincinnati, 1882; aged 54; formerly a practitioner of Wilmington, Ohio, and Joliet, Ill.; died at his home in Springfield, Ohio, August 28.

NATHAN HOLMES (years of practice, Illinois, 1878); aged 73; of Delavan, Ill.; a member of the Illinois State Medical Society; formerly coroner of Tazewell county; died in the Peoria State Hospital August 13, from cerebral hemorrhage.

WILLIAM P. MARSHALL, M. D. Ohio Medical University, Columbus, Ohio, 1894; aged 71; for many years a practitioner of Long Point, Ill., and later of Oklahoma City; died at his home in the latter city, July 31.

WILLIAM JAMISON McCLEMENT CUNNINGHAM, M. D. Rush Medical College, 1904; of Chicago; a member of the Illinois State Medical Society and Chicago Dermatological Society; died in the Presbyterian Hospital, Chicago, August 13.

ISAAC G. GEE, M. D., Eclectic Medical Institute, Cincinnati, 1865; aged 74; first vice-president of the Third National Bank, Mt. Vernon, Ill., and president of the Waltonville Bank, and an extensive land owner; died at his home in Mt. Vernon, September 2.

WILLIAM W. SHEPPARD, M. D. College of Physicians and Surgeons, Chicago, 1885; aged 66; a Fellow of the American Medical Association; for many years a practitioner of Chicago; but for a short time a resident of St. Petersburg, Fla.; died at his home in Chicago, August 16.

HENRY D. SMITH, M. D. Eclectic Medical Institute, Cincinnati, 1880; aged 61; a member of the Illinois State Medical Society; for thirty-five years a practitioner of Vandalia, Ill.; died at his home, August 7, from carcinoma.

WILLIAM J. CHENOWETH, M. D. University of Louisville, Ky., 1853; Illinois Army Medical Examining Board, 1861; aged 92; surgeon of the Thirty-Fifth Illinois Volunteer Infantry and brigade surgeon of volunteers during the Civil

War; formerly local surgeon to the Illinois Central and Peoria, Decatur and Evansville Railroads, at Decatur, Ill., and consulting surgeon to St. Mary's Hospital in that city; for many years a member of the Illinois State Medical Society; was instantly killed in a collision between his automobile and an interurban car at Cassel's Crossing, Decatur, August 19.

GREENE VARDIMAN BLACK, M. D., D. D. S., Sc. D., LL. D.

Medicine and especially the art and science of dentistry have lost in the death of Dr. Black a most distinguished and withal modest and lovable worker. Born near Winchester, Ill., Aug. 3, 1836, he studied medicine with his brother at Clayton, Ill., and dentistry with Dr. J. C. Speer, Mt. Sterling, and began the practice of dentistry in Winchester, 1858-1862. Enlisted in the 129th Illinois Volunteers, 1862. In hospital at Louisville six months. Practiced dentistry in Jacksonville, 1864-1897. President Illinois State Dental Society, 1870-1871. Invented one of the first dental engines, 1870. Lectured on pathology, histology and operative dentistry, Missouri Dental College, 1870-1880. First president of the Illinois State Board of Dental Examiners, 1881-1887. Professor of Dental Pathology, Chicago College of Dental Surgery, 1883-1889. Introduced teaching of Dental Technics, 1887. Voted life membership in Illinois State Dental Society, 1889. Professor of Dental Pathology and Bacteriology, Dental Department, University of Iowa, 1890-1891. Professor of Dental Pathology and Bacteriology, Northwestern University Dental School, 1891-1897. Chairman Section on Etiology, Pathology and Bacteriology, World's Columbian Dental Congress, 1893. Dean and Professor of Operative Dentistry, Dental Pathology and Bacteriology, Northwestern University Dental School, 1897, till his death. President National School of Dental Technics, 1897. President National Dental Association, 1900. Awarded first fellowship medal by the Dental Society of the state of New York, 1905. Special guest at annual meeting of American Dental Society of Europe, 1906. Voted Miller prize for most valuable contribution to dental science and literature by the International Dental Federation, 1910. A voluminous writer on every aspect of dental science since 1869, he contributed numerous articles to the *Dental Cosmos*, several chap-

ters to the "American System of Dentistry" and published a number of text-books, including *Micro-organisms of the Human Mouth*, 1886, *Periosteum and Peridental Membrane*, 1888, *Anatomy of the Human Teeth*, 1891, *Operative Dentistry*, 1908, and *Special Dental Pathology*, 1915.

Dr. Black was a member of the Illinois State Medical Society; received the degree of M. D., from Northwestern University Medical School, 1884; D. D. S., Missouri Dental College, 1877; Sc. D., Illinois College, Jacksonville, 1892; LL. D., Northwestern University, 1898. In recognition of his services to the dental profession a banquet was given in honor of Dr. Black, the "father of modern dentistry," by the Chicago Dental Society in 1910, which was attended by four hundred representative dentists from every part of the Union and many foreign countries.

His death occurred August 31 at his farm near Virginia, Ill., from acute pernicious anemia. He is survived by his wife, two sons, Dr. Carl E. Black, Jacksonville, and Dr. Arthur D. Black, Chicago, and two daughters, Miss Clara Black, Chicago, and Mrs. Mark Baldwin, Duluth.

NEW AND NON-OFFICIAL REMEDIES

During September the following articles have been accepted by the Council on Pharmacy and Chemistry for inclusion with New and Non-official Remedies:

Cutter Laboratory.—Anti-Pneumococcic Serum: Syringes 10 c.c. Diphtheria Antitoxin Globulin: Syringes 2,000, 3,000, 4,000, 5,000 and 10,000 units each. Normal Serum (from the horse): Syringes 10 c.c. Tetanus Antitoxin: Syringes 10 c.c.

Hoffmann-LaRoche Chemical Works.—Imido, Roche: Ampules Imido Roche.

H. K. Mulford Co.—Mercurialized Serum, Mulford: Mercurialized Serum, Nos. 1, 2, 3, 4, 5, 6.

Schieffelin & Co.—Radio-Rem: Outfit No. 4.

Standard Oil Co. of California—Calol Liquid Petrolatum, heavy.

Morgenstern & Co.—The Council has recognized Morgenstern & Co. as selling agent for Dolomol and the Dolomol preparations in New and Non-official Remedies. The Council is assured that these preparations will be marketed in accordance with its rules.

White Chemical Co.—The Council has recognized the White Chemical Company as selling agent for Apinol. The Council is assured that this preparation will be marketed in accordance with its rules.

Since publication of New and Non-official Reme-

dies, 1915, and in addition to those previously reported, the following articles have been accepted by the Council on Pharmacy and Chemistry of the American Medical Association for inclusion with "New and Non-official Remedies":

Pantopon (Pantopium hydrochloricum).—A mixture of the hydrochlorides of the alkaloids of opium, containing 50 per cent of anhydrous morphine hydrochloride. It produces essentially the effects of opium, but, being devoid of opium extractives, may be used for hypodermic administration. It is probably absorbed more promptly and is free from the nauseant odor and taste of ordinary opium preparations. Pantopon (pantopium hydrochloricum) is also supplied as Pantopon (pantopium hydrochloricum) tablets 0.01 Gm., Pantopon (pantopium hydrochloricum) hypodermic tablets 0.02 Gm., and Pantopon (pantopium hydrochloricum) ampules 0.02 Gm. The Hoffmann-LaRoche Chemical Works, New York City (Jour. A. M. A., Sept. 4, 1915, p. 877).

Larosan, Roche.—Calcium caseinate, containing calcium equivalent to 2.5 per cent calcium oxide. In the treatment of diarrheas of infants a useful food is that made from the curd of milk and diluted buttermilk. The preparation of such a mixture of proper composition being difficult to prepare in a private home, Larosan, Roche, is offered as a substitute. The Hoffmann-LaRoche Chemical Works, New York City (Jour. A. M. A., Sept. 4, 1915, p. 877).

Betanaphthol Benzoate, Merck.—A non-proprietary preparation of betanaphthol benzoate (see New and Non-official Remedies, 1915, p. 210). Merck & Co., New York (Jour. A. M. A., Sept. 4, 1915, p. 877).

Dessicated Pineal Gland, Armour.—The pineal gland of normal cattle, freed from connective and other tissues, dried and powdered. There is some evidence that there is a relation between the pineal gland and some processes of development and growth. The therapeutic use of the gland is in the experimental stage. Pineal gland, Armour, is also supplied as Pineal Gland Tablets, Armour, 1/20 gr. Armour & Company, Chicago (Jour. A. M. A., Sept. 25, 1915, p. 1111).

Scopolamine Stable, Roche.—An aqueous solution of pure scopolamine hydrobromide protected against decomposition by the addition of 10 per cent. of mannite. It has the properties of scopolamine hydrobromide, U. S. P. It is supplied in ampules, each containing 1.2 c.c. (L c.c. contains 0.0003 Gm. scopolamine hydrobromide). The Hoffmann-LaRoche Chemical Works, New York (Jour. A. M. A., Sept. 25, 1915, p. 1111).

Coagulen, Ciba.—An extract said to be prepared from blood-platelets and to contain thromboplastic substance mixed with lactose, 1 Gm. representing 20 Gm. dried blood. It is said to act as a hemostatic and to be useful in the treatment of local and certain internal hemorrhages. Solutions of

Coagulen, Ciba, are used locally, intramuscularly and intravenously. A. Klipstein & Co., New York (Jour. A. M. A., Sept. 25, 1915, p. 1111).

Calol Liquid Petrolatum, Heavy.—A non-proprietary brand of liquid petrolatum, U. S. P., said to be derived from California petroleum and to consist essentially of hydrocarbons of the naphthene series. It is colorless, non-fluorescent and practically odorless and tasteless. Its specific gravity is 0.886 to 0.892 at 15 C. Standard Oil Company of California, San Francisco, Cal.—(Jour. A. M. A., Sept. 25, 1915, p. 1111).

Tetanus Antitoxin for Human Use.—Marketed in syringes containing 1,500, 3,000 and 5,000 units each. Cutter laboratory, Berkeley, Cal.

Diphtheria Antitoxin, Globulin.—Marketed in syringes containing 2,000, 3,000, 4,000, 5,000 and 10,000 units each. Cutter Laboratory, Berkeley, Cal.

Anti-Pneumococcic Serum.—Marketed in syringes containing 10 c.c. Cutter Laboratory, Berkeley, Cal.

Normal Serum (from the horse)—Marketed in syringes containing 10 c.c. Cutter Laboratory, Berkeley, Cal. (Jour. A. M. A., Sept. 25, 1915, p. 1111).

During August the following articles have been accepted by the Council on Pharmacy and Chemistry for inclusion with new and non-official remedies:

Armour & Co., pineal gland desiccated.

Hoffman-La Roche Chemical Works, scopolamine stable Roche, Iaroslan, Roche, pantopon (pantopium hydrochloride).

A. Klipstein & Co., coagulen, Ciba.

DO YOU WANT A DIRECTORY OF ILLINOIS PHYSICIANS?

A few copies of the new and revised edition of the Illinois Physician's Register, prepared and published by the State Board of Health, are still available to members of the profession and can be obtained on request addressed to Dr. C. St. Clair Drake, Secretary, Illinois State Board of Health, Springfield, Ill.

This directory contains the name and last known address of every medical licentiate of Illinois and is as complete and accurate as painstaking endeavor can make it.

No charge is made for single copies mailed to residents of this state.

Because the babies can't speak for themselves, we who love the little ones should speak for them.

A great many people in Chicago are thinking of the babies and what may be done to help them. Keep up the good work. Don't stop thinking, either.

"Suffer the little children to come unto me" does not mean that the baby kingdom of this world should be ushered prematurely into the Kingdom of Heaven through ignorance and neglect.

Who would assume the responsibility of estimating the future of any infant, though born in a manger? Who can tell what the loss to the world would have been had these babies died—Baby Washington, Baby Lincoln, Baby Edison, et al.?—From "Baby Week" Bulletin of the Chicago Department of Health.

STATE SANITARY ENGINEER EXAMINATION

A competitive test for candidates for the position of chief sanitary engineer, another new office established in connection with the Illinois State Board of Health by enactment of the last General Assembly, is announced by the State Civil Service Commission for November 6.

Only such candidates as pass the preliminary test, which will be an unassembled test, will be brought together for the oral examination.

The necessary qualifications and duties of the position are set forth by the Civil Service Commission as follows:

Salary \$250 to \$500 per month. Open to men over 25 years old. Open to non-residents of Illinois. One position with Board of Health. Scope and weights: Training, experience and qualifications for the position, 10. The preliminary portion of the examination will be unassembled, questions on education and experience being mailed to applicants. Those who receive a rating of 65 or more on the preliminary portion will be interviewed orally at a later date. Duties include examination of projects for water supply and purification, drainage, disposal of sewage and garbage, sanitary investigations and publicity work.

STATE EPIDEMIOLOGIST EXAMINATION POSTPONED.

The Illinois State Civil Service Commission announces postponement of the examination for epidemiologist, a new office created in the State Board of Health, to November 6, a sufficient number of applications not being received to warrant holding the test on October 2, as previously advertised.

In the preliminary test for this position the candidates will not be assembled. On application a questionnaire will be supplied to candidates, this being designed to bring out their training, experience and such other qualifications as tend to fit them for the office. Those graded as sufficient in this respect will later be assembled for an oral examination.

Duties include investigation of diseases of man with regard to their control and the organization

of health service in communities. Must be qualified to make clinical diagnosis in communicable diseases. The position pays \$2,400 per annum.

EXAMINATION FOR ENTRANCE TO THE MEDICAL CORPS OF THE NAVY.

The next examination will be held November 15, 1915, at Washington, D. C.; Boston, Mass.; New York, N. Y.; Philadelphia, Pa.; Norfolk, Va.; Charleston, S. C.; Great Lakes (Chicago), Ill.; Mare Island, Cal.; and Puget Sound, Wash.

Applicants must be citizens of the United States, and must submit satisfactory evidence of preliminary education and medical education.

The first stage of the examination is for appointment as Assistant Surgeon in the Medical Reserve Corps, and embraces the following subjects: (a) Anatomy, (b) physiology, (c) materia medica, (d) general medicine, (e) general surgery, and (f) obstetrics. The successful candidate then attends a course of instruction at the Naval Medical School, during which course he receives a salary of \$2,000 per annum, with allowances for quarters, heat and light, and at the end of the course, if he successfully passes an examination in the subjects taught at the school, he is commissioned an Assistant Surgeon in the Navy.

Full information with regard to the physical and professional examinations may be obtained by addressing the Surgeon General of the Navy, Navy Department, Washington, D. C.

Book Notices

HABITS THAT HANDICAP. The Menace of Opium, Alcohol and Tobacco, and the Remedy. By Charles B. Towns. New York: The Century Company. 1915. Price, \$1.20 net.

In the last paragraph of the first preface the author apologizes in a weak way for unduly criticising the doctor. If one believed all the statements in this book he would think that the medical profession were responsible for all the drug addicts. However, there are so many extravagant statements between the covers that readers generally will not give much credence.

An advertising note on the cover reads: "It is almost as important, he (Mr. Towns) believes, that the public should be wary about sanatoriums, and even about many doctors as about drugs themselves." Again, in the preface: "Opium and its derivatives threaten the entire public." In the introduction: "It

is estimated that fifteen per cent. of the practicing physicians in the country are addicted to the habit," which he admits is an exaggeration. "I have elsewhere explained the fact that the medical man himself is ignorant of the length to which he can safely go in the administration of drugs to his patients." Again: "This seems strange, since there are in the United States more victims of the drug habit than there are of tuberculosis."

While there is much in the book that is good, there is so much that is self-praise and so much of condemnation of the doctor, nurse, and pharmacist, and so many exaggerated statements and implications, that much of the value otherwise is lost.

A MANUAL OF SURGERY FOR STUDENTS AND PHYSICIANS. By Francis T. Stewart, M. D., Professor of Clinical Surgery, Jefferson Medical College; Surgeon to the Germantown Hospital; Out-patient to the Pennsylvania Hospital. Fourth edition, with 580 illustrations. Philadelphia, P. Blaskiston's Son & Co. Price, \$4.00.

An unusually good manual of surgery, being as complete as most text-books. It is thoroughly up-to-date, having undergone complete revision, with considerable new matter added. Diagnosis, especially by the aid of instruments, has been greatly enlarged upon—*e. g.*, bronchoscopy, esophagoscopy, proctoscopy, radio-graphy, etc. Much important revision and expansion have been done on the articles on transfusion, hemorrhage, spinal puncture, colectomy, hernia, tumors of the hypophysis, surgery of the lung, the liver, spleen, stomach and breast. New sections have been included on exclusion of the pylorus, sporothricosis, surgical aspects of purpura, esophagectomy, esophagoplasty, foreign bodies in the palm, infection of the hand, and on transplantation of fat, fascia, bone and veins. As a modern manual of surgery, it fulfills all requirements.

THE CLINICS OF JOHN B. MURPHY, M. D., at Mercy Hospital, Chicago. Vol. IV, No. 4. August, 1915. Published by W. B. Saunders Company, Philadelphia and London. Published bi-monthly. Price, per year, paper, \$8.00; cloth, \$12.00.

In this number Dr. Murphy discusses syphilis, and is very emphatic in his opinion that 606 is not the best remedy. Perhaps the most important feature in his talk on this subject is his plea for an early and efficacious treatment of the chancre.

There are in this number thirty-one other subjects taken up clinically, including several Fracture Cases, Plastic Operations, Operations for Tubercular Conditions, Cholelithiasis, Fecal Fistula, Papilloma of bladder, Compound Fracture of Both Feet, Bony Tumor of Spinal Canal, Carcinomas of several regions, and others of common occurrence.

This number appears rather larger than the average number and discusses a larger number of subjects.

THE MEDICAL CLINICS OF CHICAGO. September, 1915. Vol. 1, No. 2. Published bi-monthly by W. B. Saunders Company, Philadelphia and London. Price, per year, paper, \$8.00; cloth, \$12.00.

The second number of "The Medical Clinics" leads one to believe that the work will be a success. The clinicians are Doctors Abt, Goodkind, Hamburger, Hamill, Mix, Preble, Pusey, Tice, and Williamson.

Such subjects as Duodenal Ulcer, Carcinoma of the Stomach, Aortic Aneurysm, Tubercular Pleurisy, Locomotor Ataxia, Splenic Enlargement, Several Cardiac and Aortic Cases, X-Ray and Epithelioma, and Tuberculous Meningitis are discussed. Numerous illustrations are given, and, with all, a very creditable number.

THE DUCTLESS GLANDULAR DISEASES. By Wilhem Falta, Vienna, Translated and Edited by Milton K. Meyers, M. D., Neurologist to the Lebanon Hospital, and to the Dispensaries of the Jewish and St. Agnes Hospitals, Philadelphia, etc., with a foreword by Archibald E. Garrod, M. D., (Oxon.) F. R. C. P. (London), F. R. S., Physician to St. Bartholomew's Hospital, London, with 101 Illustrations in the Text. Philadelphia: P. Blakiston's Son & Co., 1012 Walnut Street. Price, \$7.00 net.

This translation from the German is somewhat out of the usual line of text-books, being devoted to the clinical aspect of diseases of the ductless glands. Until recently so little has been known of the secretions of the internal glands, and views of the various authors have differed so widely, that one was in a quandary as to what to accept and what to reject.

The author in this work gives the views of many authors, but emphasizes his own views as gained from his exhaustive study and experimentation. The work will be valuable to the diagnostician, as in it are detailed descriptions of symptoms which are owing to lesions or disturbances in these glands, and which have heretofore been too little understood.

DISEASES OF THE NERVOUS SYSTEM: A TEXT-BOOK OF NEUROLOGY AND PSYCHIATRY. By Smith Ely Jelliffe, M. D., Ph. D., Adjunct Professor of Diseases of the Mind and Nervous System, New York Post-Graduate Medical School and Hospital, and William A. White, M. D., Superintendent of the Government Hospital for the Insane, Washington, D. C.; Professor of Nervous and Mental Diseases, Georgetown University; Professor of Mental Diseases, George Washington University, and Lecturer on Psychiatry, U. S. Army and U. S. Navy Medical Schools. Octavo, 796 pages, with 331 engravings and 11 plates. Cloth, \$6.00, net. Lea & Febiger, Publishers. Philadelphia and New York: 1915.

A new book and a book written in a new way, so far as texts on diseases of the nervous system are concerned. The authors were not content with giving a detailed description of gross lesions of the brain, spinal and other nerves—they have gone rather deeply into the nervous and mental conditions resulting from modified glandular secretions.

The work is divided into three general divisions:

1. Physicochemical Systems (Visceral Neurology).
2. Sensori-Motor Systems.
3. Psychic or Symbolic Systems (Neuroses and Psychoses).

In a brief review one cannot portray the scope of this volume. The authors have written it, keeping in mind all the time the practical value to the reader.

Unlike many books written on this subject, it is well illustrated, and this feature adds greatly to the text.

It is an excellent text for the student, and we recommend it to the practitioner as well.

TOMORROW'S TOPICS SERIES—in three volumes, entitled: *Microbes and Men, Doctors Versus Folks, A Surgeon's Philosophy.* By Robert T. Morris, M. D. Illustrated. Garden City, N. Y., Doubleday, Page & Co.

Whatever else we may say about Dr. Morris, he is a "thinker." Apparently these books are the results of his thinking at many different times and on many different subjects—in fact, on any subject which occasion called to his mind, and for that reason the topics are as disconnected as is possible to imagine.

The title of the third book, "A Surgeon's Philosophy," is well chosen, and might apply to the other volumes. At times the philosopher seems to be a soliloquist and one overhears his dream.

Without a personal knowledge of Dr. Morris, one reaches the conclusion, from reading these volumes, that he is looking at life from a rather self-satisfied point of view; that he is thoroughly content with himself, and does not see the viewpoint that less fortunate individuals may have.

These philosophies were written during vacation time on the farm by, we should say, the proprietor of a modern "vacation" farm, who needed the farm for a vacation, and was not concerned at all about the productive value of the soil. The man who guided the plow all day around rocks and stumps would have an entirely different viewpoint, and could not find the same pleasure in the farm, nor accept the same philosophy. Neither do we think the doctor who is not so well equipped, who is not so comfortable, nor so successful as Dr. Morris, consequently not so happy, can accept all of Dr. Morris' philosophies.

In "Doctors Versus Folks" are many statements that the doctor, who has not been so successful, will not like. One gets the "feeling" from this book—a book written for the layman—that the doctor, who is not well known, nor who does not live in a "brown stone front," nor whose name does not appear frequently in the newspapers, nor who is not doing large surgical operations, nor who is not connected with some large clinic, really does not amount to a great deal professionally or otherwise, and that he lives largely by "fee splitting" and other undesirable methods. He does not say this, but the feeling is left. The author fails utterly to see the other side—the side on which is the great majority of doctors.

Dr. Morris is an egotist and is quite flattered with himself, and the books teem with it. This same egotism, coupled with a large gray matter, has probably played an important part in placing Dr. Morris in the comfortable position and enviable frame of mind in which he now finds himself.

Few will read one of the books through at one reading, as many books are read, but one will go back and read more. Read them and you may get some of the author's enthusiasm and some of his viewpoint.

ILLINOIS MEDICAL JOURNAL

THE OFFICIAL ORGAN OF

THE ILLINOIS STATE MEDICAL SOCIETY

VOL. XXVIII

CHICAGO, ILL., NOVEMBER, 1915

No. 5

Original Articles

TREATMENT OF TUBERCULOUS DISEASE OF THE SPINE.

HENRY BASCOM THOMAS, M. D.,

CHICAGO, ILL.

Attending Orthopedic Surgeon, St. Luke's Hospital; Chief
Department of Orthopedics, Cook County Hospital.

In considering the treatment of caries of the vertebral bodies, the following division of the subject aids in the description:

1. Early recognition of the disease.
2. Treatment in the acute stage.
3. Treatment of the sub-acute and chronic stages.
4. Treatment of the abscess and sinus.
5. Treatment of the paralysis.
6. Operative treatment.
7. The cessation of treatment.

1. *Early recognition* of this disease is of the utmost importance with reference to a perfect result and shortened duration of treatment. So much importance is attached to finding the case and beginning treatment in the early stage that nurses should be especially trained in the signs and symptoms that will aid in early diagnosis by them. It is a fact that many cases complain little of pain and disability, and escape the mother's attention. They may not escape the watchful eye of the nurse, but we find many who are neglected by her because she probably, rightly, gives her attention to the acute illnesses among the children of her district. Thus the tuberculous back patient is unfortunate enough to have its treatment begun only at a time when two, or three, and sometimes four vertebral bodies are actually destroyed and gone. These cannot be replaced. The loss in length of the column will never be regained. The long period of treatment will do no more than allow nature to callous in and about the extensively diseased area. On the other hand, if the case could come early, treatment would be shortened and the result would be better.

2. *Recumbency* is without doubt the treatment preferable in the beginning of the *acute stage*. This should be maintained for the first few days by keeping the child flat on its back in a surgical bed. The advantage of this type of bed, where the middle does not sag, is obvious, in that it tends to obliterate the inclination of the tuberculous back to form a backward, deforming projection.

In choosing the treatment for the acute stage, as also for the sub-acute and chronic stages, the position of the disease in the back must be taken into consideration. Disease below the seventh or eighth dorsal vertebra will do well during the beginning of treatment without apparatus when kept quietly on the back. If the disease is in the cervical, high, or middle dorsal region, relief from uncomfortableness and an advantage in the treatment are obtained by an apparatus which will allow extension of the parts. This is most easily obtained by placing a Sayer's halter over the chin and occiput. From a rope attached to this apparatus a weight equal to half a brick or three bricks is arranged so that it will extend beyond the head of the bed, thus giving traction.

On account of the absence of pain in the child's back, unless we devise some means for restraining the turning, twisting movements, it is frequently impossible to compel the patient to keep as quiet as is necessary for the most perfect calcification and ankylosis about the diseased vertebral bodies and spinous processes. Further restraint is best given by the use of a gas pipe frame, onto which the child is bound. This frame is made of one-half inch gas pipe, and the dimensions should be, in width, that of the child's shoulders, and, in length, that of the child, plus twelve inches. It should be covered with heavy canvas laced together beneath, leaving a space between the edges so that the slack from time to time may be taken up. This canvas should have an opening at the site of the child's

buttocks, to admit of a permanent drain. The frame should be suspended by two straps from each end, which are attached to the foot and the head of the bed. In the early treatment, the frame should be straight. Later, it should be bent gradually, in order to reduce in some degree the kyphosis. From now on, the burden of the successful management of the acute stage of this disease falls more to the nurse and mother than to the doctor. There are few nurses who are capable of so managing a case of tuberculous spondilitis as to prevent movements which,



Figure 1. Skeleton of healed tubercular spine, showing spinous processes and neighboring bone more or less ankylosed after periosteum has been worn away by friction. Preparation for ankylosis of this kind, but far more extensive, is the object of the operative work advocated by Hibbs. X indicating ankylosis.

though slight and infrequent, destroy the callous which has been in making for weeks.

No clothing should go over the child that does not embrace the frame along with the child's body, thus preventing movements of the shoulders and the back which are necessitated by fitting a shirt or jacket, which do not include the frame. No removal of the patient from the

frame should be attempted unless two people who understand the technique used in turning the child are present. The best way, in my experience, is for one attendant to grasp the hips of the child, while another grasps the shoulders, carefully make traction, and then lift cautiously, and turn the patient on to the abdomen, guarding against motion in the spinal column. In this position the child's back should be bathed and the patient returned to the frame by the same method as that used in taking him from it. Frequently, cases do not get proper supportive fixation by means of the recumbent treatment aided by the frame, and I have supplied with satisfaction, in such instances, fixation with a metal brace or plaster cast while continuing the prone position in bed.

3. In the *sub-acute and chronic* stages, the patient, if possible, should have such fixation as will allow of ambulatory treatment. This is called for at a time when the back has progressed to a stage where a plaster jacket or metal brace can be applied without noticeable rigidity of the back muscles, and without fright or pain on the part of the patient. Support by means of a cast or brace which may be entirely hidden by clothing is most efficient when the disease is in the lower dorsal and upper lumbar region. However, if the cast or brace may have such head appliances as will control the upper dorsal and cervical vertebrae, grasping the head and thus immobilizing the neck, the ambulatory treatment with brace or cast becomes as efficient when the disease is in the upper region as when it is confined to the lower dorsal or lumbar part of the spine. When the disease, however, is in the lower lumbar region, the question of perfect fixation is probably the most difficult when ambulatory treatment is desired, for unless the apparatus comes down and includes the thighs so that the child does not walk, it is difficult to obtain satisfactory fixation for the disease. Therefore, where the tubercular process is in the lower lumbar vertebrae, ambulatory treatment is questionable, except in exceptional cases.

4. The most important advice regarding the *treatment of abscess* coming from tuberculous bone is: "Leave it alone." This is the treatment unless there is some urgent indications for interference. Such indications may be (1) disturbance caused by pressure; (2) mixed infection in

the abscess from within; (3) such a position of the abscess as to cause uncomfortableness to the patient. For instance, a large abscess on the back will be an annoyance when the child lies down; one situated on the inner side of the thigh will cause friction and interfere with walking, or one about the gluteal muscles will interfere with sitting. When an abscess is to be opened, great care should be taken that there is no chance for infection and that the mouth of the wound from which the pus has been drained is carefully closed.

The soreness and redness that persist about the sinus of an old abscess is relieved by either x-ray or radium treatments. However, as far as I have been able to conclude, the bone disease has not been improved by maximum doses given tuberculous joints on my hospital services.

The psoas contraction and flexion of the thigh often caused by burrowing of the pus from the spine, between the least resistant tissues along the sheath of the muscle, frequently complicates the disease when it occurs in the lower dorsal and lumbar region, and here a position of extension and abduction of the leg should be maintained by a carefully placed Buck's apparatus kept perfectly adjusted.

The treatment of *Pott's Paraplegia* embodies the treatment of the disease with emphasis on extension of the spinal column. Prognosis for this condition is generally considered good, and after treatment over a goodly length of time, the control of the limbs usually returns. However, in many of the adult cases this is found not to be true, even with the best of extension treatment. When recovery does not occur, the paraplegia is probably due to excessive enlargement and thickening of the membranes of the cord. *Laminectomies* or *osteoplastic resections* of the spine have been done in these cases. Although these operations have in each case given slight improvement and satisfaction to the patient, the relief from pressure has not been enough to allow a return of motion in the legs, and no patient operated on has yet been able to get up and about.

6. The history of the *operative treatment* in the management of Pott's disease includes the attempts made to stiffen the spine by placing steel bars under the skin along either side of the spinous process. This was a failure. Later, in

the history of the operative treatment, came the operation performed by Dr. Albee of placing a piece of bone, usually taken from the tibia or a rib between the split spinous processes: next the operation of Hibbs, whose object is to ankylose the diseased vertebrae by utilization of the spinous processes stripped of their periosteum and the curretting of the articular processes. These operations, of course, do not attempt to touch the process of the disease. Indeed, they keep far from the disease, and their only object is to do exactly what the immobilization by the cast or the metal brace does, but to do it more perfectly. This under-the-skin fixation of the diseased ver-



Figure 2. Child with tubercular spine on gas pipe frame with extensions on chin, occiput and feet.

tebrae is a most valuable asset in the treatment, especially in those cases that desire to cut down the duration of treatment, and in those cases where mechanical fixation is difficult to maintain in place. Each of these operations fills an important place in the treatment of caries of the spine, and as the technique improves their place will become more and more important among the methods of treatment.

On examination of skeletons from the tuberculous spine cases in which the healing has taken place by the processes of nature, I am struck frequently with the fact that there is often firm ankylosis between the laminae and spinous processes of one vertebrae with another, where the periosteum of these parts has been worn away by friction. The surgical work done by Hibbs is a preparation for sound, quick ankylosis of the parts of the bony column. This preparation takes place often without operation, only, however, at the end of a period of time long enough to allow for needless destruction of vertebral

bodies and removal of periosteum by friction. In an operative way, the foundation for this same reparative condition can be made by the surgeon in a very few minutes. Then, with the assistance of nature over a short period of only a few months, we will get a result that it would take nature three or four years to accomplish.

7. The question of cessation of treatment is one which is vexing. When the patient is in support and tenderness has disappeared, parents and children begin to beg for release of the diseased back, and repeated explanation of the pathology of the weakened spine must be made in justification of the continued treatment. Two or three years of rigidly supervised fixation treatment is necessary in most of the cases; in the severe ones, one or two years more are necessary when successful operative aid to support has not been added. The treatment may be shortened considerably by these operations, often reducing the time two-thirds. My cases, however, require mechanical support after the operation, even when fracture or absorption of the bony graft has not taken place. The absence of tenderness or pain does not aid in judging when the support should be removed. Increased bony fixation judged from examination of the kyphosis, and the absence of rigidity of muscles, shows the result of efficient treatment, but does not always indicate that the support should be removed. When the case was one of mild degree at the beginning of treatment, roentgenogram showing only slight loss of bone, and if the treatment has progressed for two years satisfactorily and examination shows not only no signs of active disease, but every indication of firm callous support, the brace or jacket is removed. This must be done by degrees. At first, it is best to remove it for the night only, taking it from the back and replacing it while the patient is prone. Later, the support may be removed and replaced while in a sitting position. The next step is to remove the support for a period during the afternoon, as well as for the night. Gradually, in this way, over a period of a few months, the support should be put aside entirely. It is wise, however, to continue supervision of the case at irregular intervals for a period of months after all support is discarded and the back pronounced cured.

INCIPIENT PHTHISIS IN CHILDHOOD.*

L. A. JUHNKE, M. D.

CHICAGO.

From the Chicago Department of Health.

The subject assigned to me is of extreme importance to every medical man, and of still greater importance to the health of the community, of which we are the appointed guardians.

I have limited my talk entirely to tuberculosis in childhood, the most important one of the respiratory diseases, and hope the few minutes I shall take up of your time and the few points which I shall endeavor to bring out will compensate you for omitting the non-tuberculous respiratory diseases. I leave them for some future time when they may be made the topic by some one among you more familiar than I with their elucidation.

The subject of tuberculosis in childhood is in itself so immense that in the few minutes allotted me I shall only cover a few important points in the etiology, pathology, symptomatology and treatment.

Etiology: The specific cause as you know is the bacillus tuberculosis.

PREDISPOSING FACTORS.

Heredity: That there are undisputed cases of placental infection in utero cannot be denied. According to the students of Warthin, Curie, it is perhaps a little more frequent than heretofore supposed. Suffice to say, however, that its occurrence is rare and from a practical point of view may be entirely dismissed.

The question of hereditary tendency, however, is universally accepted, not so much the hereditary predisposition to tuberculosis itself as the inherited lowered resistance of the organism, the result of hygienic and sociologic conditions over which the organism has no control. The theory of hereditary predisposition to tuberculosis itself probably can be discarded entirely, as more frequently a partial or relative immunity is conferred to the offspring by a tuberculous mother than the reverse. Turban, Solly & King have shown that tuberculosis in patients who give a history of tuberculosis among the parents, runs a more chronic course, and frequently is a milder grade of infection. And this is what we ought to expect. The gradual syphilization of the race

*Read before a meeting of the School Health Officers of the City of Chicago, Feb. 15, 1915.

since the middle ages has conferred upon the human race a partial immunity, which accounts for the milder infection of the present day as compared to the severe scourge which befell the people of Europe when syphilis was first brought there. It is also observed in orphan asylums that no greater proportion of tuberculosis develops among children of tubercular ancestry than in those without it.¹

Hygienic Conditions: The important part played by fresh air is universally recognized, not only by the medical profession, but by the laity as well. The admirable tendency of the public in general to develop fresh air babies, fresh air children, the increasing number of sleeping porches being built, etc., can only be commended and encouraged.

Sociologic Conditions: That tuberculosis is only a disease of the poor has been disproven so many times by its occurrence among the well-to-do, that further evidence is unnecessary, but that in the majority of cases, poverty, with the close contact resulting from overcrowding in small rooms, and its bedfellow, ignorance, are responsible for the propagation of the disease, cannot be questioned. Our tuberculosis clinics in the large cities, here and abroad, have proven it repeatedly that given an open case of tuberculosis in the mother not one member of her offspring will escape infection. Lack of knowledge of the nature of tuberculosis, of its infectiousness, of its curability in the early stages, of the existence of special public institutions for the treatment of the consumptive, is the cause of the much greater toll of life among the poor. Lack of means for healthful existence, however, is perhaps the greatest single cause for the spread of the disease. Those of you who have had experience in social work or in Municipal Tuberculosis Sanitarium and Dispensary work know that in the majority of cases that come to the clinics there is a dire need of the ordinary necessities of life, much less sufficient to put an effective anti-tuberculosis fight into operation.

Age of Infection: This interests us considerably. When we realize that the majority of cases of tuberculosis die in early adult life, between twenty and forty years of age, and the chronic nature of the disease, and when we further realize that the age between twenty and forty is the

child rearing period, it is very evident that the offspring in such cases are very likely to become infected early in life. And such is the case. This is not only proven by the numerous instances of entire family infections, but by the increasing number of positive Von Pirquet reactions obtainable among older children. Excluding the few cases of direct exposure to infection in later life, it is probably safe to say that most cases of tuberculosis are infected before the fifteenth year of life, and as we are the guardians of the children under that age, it ought to be of paramount interest to us to learn to discover these cases and institute measures to prevent *prolonged re-infection* by placing them under appropriate supervision.

METHODS OF ENTRANCE INTO THE ORGANISM.

Pulmonary Tuberculosis: That the tubercle bacillus enters the organism by way of the respiratory tract has been gradually accepted as being the most frequent manner. This, however, has been over-estimated. The postulate of Koch that since no primary lesion can be found in the intestinal tract or in the mesenteric lymph glands, we cannot suppose that infection by way of the digestive route is at all common, is untenable. If it were, our work in the inspection of cattle would all be wasted energy. Different authors estimate the undoubted cases of intestinal infection as varying from three to thirty-five per cent.² The infection by way of the respiratory tract deserves some consideration. Although bacilli may reach the smaller bronchi and alveoli of lung by direct inhalation; it is by no means very common that this does occur since the air filters in the nose and throat and the ciliary barrier of the bronchi prevent this rather effectively. A much shorter route is open to the bacteria whether they be inhaled or introduced into the mouth with food, and this by way of diseased tonsils, inflamed nasal mucosa, and diseased gums surrounding carious teeth. The early glandular involvement at the anterior lateral surface of the neck bears evidence of that fact.

Pathology: Here the title of my paper, "Incipient Phthisis," conflicts a little with my conception of the disease. According to most authorities, and especially Turban, whose classification has been accepted by the International

1. Raveuel, chap. 1, in Klebs on Tuberculosis.

2. Raveuel, chap. 1, in Klebs on Tuberculosis.

Tuberculosis Congress, tuberculosis is classified into three stages:

1. Glandular.
2. Pulmonary without breaking down of tissue.
3. Pulmonary with breaking down of tissue or excavation, and visceral.

Thus you will see that in discussing incipient phthisis, we are discussing the second stage of a disease without having paid any attention to the primary or glandular stage. Whether infection has occurred by way of the respiratory tract or by way of the intestinal tract, the glandular involvement adjacent to the site of infection is the most frequent site of development. In the respiratory method of infection, the cervical lymph nodes, especially the anterior, become enlarged successively until within a short time we have the entire chain enlarged. This enlargement, however, is not necessarily due entirely to tubercle, the soil may have been prepared by previous infection of the tonsil, nasal mucosa, etc. Under continued reinfection, and this I wish to emphasize particularly *under continued reinfection*, it soon, however, becomes generalized, involving peribronchial, bronchial, axillary, retroperitoneal or inguinal lymph glands. It is but a step from the lymphatic to the circulatory system, and whether the poor circulation of the pulmonary apices offers favorable ground for the pulmonary development, or whether the pulmonary infection occurs from contiguous bronchial glands cannot be positively stated. Both probably occur. At any rate the third and fourth order of bronchi at about the level of the clavicle or immediately below it, especially posteriorly, are the sites which first become demonstrable as tuberculous foci.

Diagnosis.—The standard text-book description of the tuberculous child is about as follows: An undernourished, anemic child, with a rather clammy skin, dry hair, poor teeth, enlarged cervical glands; a child outdistanced at play, easily fatigued, and on account of repeated minor ailments behind in studies.

This stereotyped description holds good for a group of cases in which the majority of symptoms described are due not to the tuberculous infection, but to the insufficient or poor food, improper hygiene, and associated oral or nasal abnormalities. I venture to say that there are

three times as many cases of poorly nourished and anemic children not due to tuberculosis as there are in which these symptoms are due to tuberculosis. Those of you, who are engaged in the poorer districts of our city full well know that one-quarter or one-third of the school population presents symptoms similar to the above and not all by far are tuberculous.

In the better neighborhoods of our city, the tuberculous child is frequently a healthy, rugged looking individual with a flushed, fresh air cheek, well-nourished, alert in school, capable at play, presenting no evidence except perhaps a few enlarged cervical glands and a slightly rapid pulse as proof of his infection. Not stinted by lack of nourishment nor handicapped by poor hygiene, he has developed normally, and it is only after prolonged exposure to reinfection that he gradually falls behind his fellow. How then are we to detect such an individual with our hurried and limited examination which we are permitted to make? Right here I want to make a statement. Under our present system, without consent to strip the child and under the stress of fifty physical examinations demanded a week, it ought not to be requested of us to make a positive diagnosis of tuberculosis. It will not only save humiliation for the Department as a whole, but it will save our reputation among our fellow-practitioners who look askance at every diagnosis made by a school physician, and who themselves have not the courage nor the inclination to make a diagnosis of tuberculosis themselves in many instances.

There are, however, a few points which most of you are very familiar with, and these are the enlargement of the anterior cervical glands, the chain of glands, the enlarged axillary glands, the bluish sclera, the muscle spasm over the apices at the back of the neck, the increased elasticity of the skin over the older foci due to the fat absorption and the spasm of the skin muscles over the acutely inflamed area, the increased pulse rate, the vasomotor instability, etc. These points are all valuable, but of much greater importance is the family history. The above mentioned points do not make a diagnosis, but they do tempt us to further inquiry in regard to the family of the child. It is here where the important part of the school nurse comes in. We can have her inquire into the family history, whether any member has

had consumption or is under treatment, or whether the living conditions of the family are responsible for the anemia, undernourishment of the child, in short, for the pathology present. When we consider that there are perhaps 100,000 cases of tuberculosis in this city, we can readily see that the chance for infection is very great for the child, but to make the diagnosis in the child early enough to prevent it becoming dangerous, it is necessary to have his family history. This, I believe, is the most important point in the diagnosis. We must rely upon our nurse to get at the facts, and if one of the parents have tuberculosis in any form, we ought to conclude from that alone that the child is infected. This is a bit radical, but the error will be on the side of "Safety First."

From a practical point of view, the diagnosis of tuberculosis in schools ought to be handled differently from what it is today.

Realizing that it is impossible for the ordinary school health officer to make a positive diagnosis upon which the Health Department can stand and recommend treatment, I wish to make the following suggestion:

All suspected cases picked out by the health officer ought to be carefully investigated by the school nurse. A careful family history should be obtained, including the hygienic conditions of the dwelling, the financial condition of the family, the intelligence of the family, and above all, whether any member has, has had, or may have a tuberculous infection. These cases ought then be brought to a central clearing house where men competent to make a diagnosis can examine them, make all tests necessary, and arrive at a definite diagnosis. Or the central clearing house may go to the patient; a few men especially trained may each visit a certain group of schools at intervals, and examine all the children picked out for them. Assisted by one or two capable nurses, and seeing each patient perhaps several times, a positive diagnosis ought to be reached in each case. The latter method, I believe to be preferable, producing less alarm among the parents, who in many instances refuse to let their children be taken to hospitals and dispensaries, even for examination. Fortified with a positive diagnosis, the Health Department can take steps necessary and recommend treatment for the individual case, and

also endeavor to provide conditions under which children should receive their education.

Treatment.—Before we consider the treatment of the individual we ought to consider first the treatment of the community, to rid the community of tuberculosis, and the measures necessary for its accomplishment. Aside from the economic conditions, such as wages, housing, quarantine for infectious cases, etc., a discussion of which we cannot enter into here, there are several other points which are of distinct advantage to us and surely to the individual afflicted or exposed. These are:

1. A closer co-operation between the Municipal Tuberculosis Sanitarium and Dispensaries and the Health Department. The school physician ought to be notified of every case of tuberculosis occurring in families, the children of which are attending any of his schools.

2. The general profession ought to be urged to report every case of tuberculosis early, so that effective measures for combating the disease among the children in that family may be taken immediately.

3. A closer co-operation between the school nurse and the school physician ought to exist; one nurse to each physician, and always present when the doctor makes his visits to investigate any case immediately at his suggestion.

4. Compulsory disinfection of premises after death or removal of a consumptive. This, I believe, is a fact the importance of which is underestimated.

As to the treatment of the individual, I have only a few words to say:

The excellent results obtained in the fresh air schools and school rooms, established under the Elizabeth McCormick Fund of this city, ought to serve as a stimulus to establish more of their kind. This ought not to be a private enterprise, but ought to be done by the school board under supervision of the Department of Health. Sufficient room ought to be established in each school to accommodate all children from families in which a case of tuberculosis, even in its incipency, exists.

Private enterprises ought to devote their attention and money to the larger problem of proper housing conditions, to the treatment of second and third stage cases among the poor, and

providing for families whose bread-winners are stricken with the disease.

Every active case of tuberculosis in the second and third stages ought to be a sanitarium case until arrested and free from bacilli-containing sputum and sufficient sanitarium beds ought to be provided for their use. It is rather interesting to note that in a city of 2,500,000 people there is not an institution devoted to the treatment of consumption where a physician may treat private cases, under conditions such as the case demands. And perhaps the greatest problem befalls our government and business enterprises, and that is to secure a wage to employes on which they can live under proper hygienic and dietic conditions, and not merely struggle to exist.

One more important point: A greater hope and perhaps more feasible than any is the immunization of children by Von Ruck's vaccine. It seems to be proven that this is not only possible, but is actually being accomplished by Von Ruck. In the city of Asheville, he has immunized about 2,000 pupils, including a great many with glandular tuberculosis, and also a few with incipient pulmonary lesions. At subsequent examination their blood was found not only immune to tuberculosis but the glandular and incipient pulmonary lesions had receded entirely. In a healthy individual, one full injection is sufficient, whereas in infected cases, two to five fractional doses may be required to procure the desired effect. The length of the immunity is not definitely known, but several cases immunized seven years ago are still immune. This work, while it was not approved by the U. S. Public Health Service,³ for reasons best known to themselves, has nevertheless been confirmed by several men of international reputation abroad, such as Sir Almroth Wright,⁴ and Misch and Leschke.⁵

I sincerely believe and hope that the day will come within the near future when every child upon entering school will be immunized against tuberculosis, just as it is now against smallpox, and if Von Ruck has what he faithfully believes he has, it will add only another name to the golden category of triumphs of American medicine.

3772 North Clark St., Chicago, Ill.

3. Jour. A. M. A., 1914.

4. Special cable dispatch to Karl von Ruck in "Experiences in Prophylactic and Therapeutic Immigration Against Tuberculosis," by Karl von Ruck, Dec. 2, 1914.

5. *Breitäge zur Klinik der Tuberkulose*, 1914, XXXI, 335.

TREATMENT OF LARYNGEAL TUBERCULOSIS.

EDWARD E. EDMONDSON, M. D., OPH. D.,
MT. VERNON, ILL.

At the present time the treatment of laryngeal tuberculosis is regarded by many as a failure and by others as an attempt at euthanasia, but with the progress of the last few years it has become better understood and therapeutic measures have been instituted with success in a large per cent of cases formerly abandoned as hopeless.

The fact that numerous "specifics" have been found wanting has been looked upon by the less studious as a measure of the value of all treatment, and therefore, where real progress has been made it requires some dissemination to bring this to our common knowledge.

Tuberculosis of the larynx is so frequently a sequel of apical disease that some of the profession have refused to look for any other causes. To these it might be well to mention that about four per cent of tonsils examined microscopically on section show the acid-fast bacilli, and that tuberculosis of the adenoids is not an unknown condition.

Primary infection of the larynx is rare, but cases have shown no other complication and are so diagnosed correctly. This is true with cases arising in dust-laden districts where the disease is endemic.

Treatment of the disease depends on numerous conditions and involves the intelligent use of numerous factors, any one of which may vitiate the results and render unfavorable a prognosis otherwise guardedly hopeful.

The treatment in any special case depends on the pathological conditions found in the larynx and in other parts of the body, but on the whole it should be divided into:

a. Hygienic. The habit of sleeping in poorly ventilated rooms or of crowding too many patients into one sleeping room, the habit of sitting in a closed room all day, rooms in which the oxygen is consumed by a stove and lamp, etc., etc., are all to be explained to the family and insistence that proper ventilation be instituted both by day and by night.

There are qualities of the air, which make some localities hot-beds for the development of tuberculosis; air that is dust-laden as in many of the smaller cities. this means germ-laden

dust; we should therefore see to it that our patients should have the advantage of a germ-free air. This nature furnishes in high altitudes, in deserts and on the ocean.

Altitude is a factor in the number of red blood cells per mm., it being known that an altitude of one mile has an average of 1,500,000 more red cells to the cubic millimeter than is the average in localities near the sea level. There is a compensatory increase in the action of the lungs at higher altitudes, which seems to me to be of value in the treatment of tuberculosis of the larynx in that it would seem that more oxygen and better metabolism is in evidence after the development of a greater lung capacity.

Thermal conditions are important in selecting a place for recuperation in tuberculosis, a temperature between 50 and 60 degrees Fahrenheit being the best tonic for incipient cases and a warm temperature being of value only in the exceptional case.

Humidity is another meteorological condition which seems to warrant careful consideration in selecting a climate for the sufferer from tuberculosis of the larynx. A moist climate seems to allow the inspired air no possibility of abstracting vapor from the secretions and therefore renders one method of elimination useless and requires the patient to cough and expectorate much more than in a dry climate. This is decidedly a detriment to the welfare of the case of laryngeal involvement.

Sunshine is possibly of greater value than has yet been ascribed to it in the mastery of tuberculous lesions anywhere in the body.

It is a disease which has most victims in the gray-light zone and the greatest number of recoveries in the white-light zones.

Sunshine has not been sufficiently analyzed to state more specifically the active constituents which aid the tuberculous patient, but it is of inestimable value in recovery.

Soil should not be forgotten; if it is a section where the timber has been cut off and the winds blow gales at times there is more irritation to the nose and throat than in timbered localities where dust storms are infrequent, and too, where the soil is laden with irritating chemicals as alkali, the effect is injurious to the throat of the tuberculous subject.

Equability of climate is an important factor in

the treatment of tuberculous laryngitis on account of the long-drawn-out recovery in these cases.

I am conscious that certain commercial interests unconsciously color some of our conclusions at times in regard to climatic conditions, which induce earliest recovery from tuberculosis, but in cases where the larynx is involved the most ideal conditions should be sought at once and the patient kept there till the lesions are completely healed and then for his prophylaxis he should be encouraged to remain in the ideal germ-free, stimulating, dry, high country which contributed so much to his recovery. Sad are the stories of those who have returned to the land of contraction of the disease once they find themselves in normal health in the land of their recovery. It means reinfection and another fight with death which ere long claims the mastery.

b. Dietetic treatment is of no small value in the successful treatment of tuberculosis. The old habit of stuffing the patient *ad nauseam* has long since given place to the more rational system of carefully calculating the digestive powers of the patient and rational feeding to meet the indications of same; milk, eggs, whole wheat, fruits, etc., being the chief constituents of the dietetic treatment.

c. Nasal, oral and laryngeal cleanliness requires the elimination of such irritating habits as the use of tobacco and alcohol, the local use of sprays and gargles for the purpose of removing toxic secretions and the relief of cough. Frequently the tonsils are found to be enlarged and red or the pillars are red streaked and then these should be removed.

d. Voice rest is the most important requirement in the treatment of laryngeal tuberculosis; frequently arrest of the process is impossible until the voice is put in absolute rest and no phonation whatever allowed till all symptoms have cleared up. The use of pad and pencil seems slow to the patient and his friends, but it means the most certain relief, it having the same relation to the larynx that a splint bears to a fracture of bone.

e. Medical treatment for the aid of certain constitutional conditions as anemia, loss of weight, massage for the inactive, also locally for the relief of irritation to the larynx, on account of cough, tenacious mucus, etc.

Local treatment is divided into topical, medical and local surgical measures for the improvement of local pathological conditions in contradistinction to treatment of the larynx for local or reflex symptoms of a subjective nature.

For intra-laryngeal lesions in general it should be said that voice changes, weakness of the voice on use, complete loss, or the less radical deviations of huskiness and hoarseness, are the more common symptoms requiring the cessation of phonation.

Treatment of the intra-laryngeal lesions are best administered by inhalations, sprays, pigments, of such medicaments as are of known value in the relief of pain and irritation to mucus surfaces; menthol, eucalyptol, camphor, benzoinol, and stimulating pigments as lactic acids and formalin. The use of guaiacol, creosote, ichthiol and the silver salts have not been so satisfactory in my hands as has the use of formalin in glycerine for topical stimulation of the laryngeal mucus membrane and submucous tissue.

Lactic acid has been used with a certain amount of success in laryngeal lesions and it has caused the arrest of some cases of lighter involvement, but the constant application of from 3 to 5 per cent. formalin in glycerine applied once a day has given better result in all cases whether intra or extra-laryngeal lesion. In addition to the use of the stronger solution of formalin applied on an applicator once a day the throat should be sprayed with a 1 to 2 per cent. solution of the same used in an oil atomizer several times a day.

Edema of the epiglottis, arytenoids, ary-epiglottic folds, or ventricular bands should be scarified with deep punctures, while infiltrative lesions of the same may require the use of the electro-cautery, and ulcers are best treated by the careful and skillful use of the curette. Excrecences and tumors are to be removed by means of appropriate curettement and the use of the punch forceps.

In cases of infiltration of the epiglottis with odynophagia and dysphagia or dyspnea the removal of the epiglottis should be done if after a careful use of the cautery the epiglottis remains as an obstruction to swallowing or acts as the seat of painful reflexes, which sometimes run to the ears, produces cough, or excites excessive se-

cretion, in many cases these are all found in the same case and render deglutition impossible.

Methods of removal: 1. The use of the suspension-apparatus and a long-handled punch-forceps, which removes a part of the epiglottis at a time; this is repeated till as much is removed as is desired. 2. The use of a lingual tonsillotome was the second method employed then later a curved nasal snare was substituted and the epiglottis removed with less hemorrhage, though hemorrhage is not an important complication in these operations.

I have devised an epiglottitome, which has a basket for holding the excised epiglottis from falling down the throat and which will section the organ in a nearly horizontal direction; it is worked on the principle of the La Force adenotome.

The removal of the epiglottis relieves instantly all the reflex pains, the cough, the excessive secretions, and the obstruction to swallowing.

The operation of epiglottomy, if I may be pardoned for the use of the word, is not intended to act in a curative manner, usually it extends the life of the patient for a few weeks, sometimes a month or two, but I have not seen any patient survive long whose larynx had reached the stage requiring the removal of the epiglottis.

The objection has been raised as to the ability of the patient to swallow without aspiration of food and drink into the larynx, and in reply I wish to state that I have seen numbers of patients who could not swallow even liquids with a cocaineized epiglottis, take both liquid and solid food within an hour after removal of the epiglottis. This being done in comparative comfort.

In the earlier operations Lockard had his patients lie face downward on a couch in order to drink without aspiration, but I think this position is of psychic value only and that the patient can eat or drink as safely sitting upright as in recumbent position.

This has reopened the question of the function of the epiglottis in deglutition which we pass on to the physiologists for settlement.

The amputation wound heals with remarkable rapidity even in granulation tissue and should be treated in the same manner as other lesions of the larynx, that is to say with sprays and applications of formalin-glycerine of weaker strength.

Ulcers and miliary tubercles of the larynx should be treated with formalin-glycerine solutions of stronger concentration, from 3 to 5 per cent. and they usually clear the epiglottis within two or three weeks.

ILLUSTRATIVE CASES.

Case 1. Mrs. E. I., aged 20 years, began to suffer decline about two years ago. Apparently tuberculosis was not even suspected by men of good reputation in St. Louis. Was operated on for appendicitis in the early part of January of the present year. Recuperation slow and unsatisfactory, a diagnostic dose of tuberculin was administered to determine the presence of tuberculosis with the result that there was a retarded reaction but a very stormy one, which within a few days later manifested in the throat as excessive secretion, cough, painful deglutition and a sense of tumor in the pharynx, Feb. 2. At this time I was called and found the epiglottis studded with miliary tubercles and some thickening of it and of the ventricular bands. I used formalin-glycerine solution, 3 per cent daily, and ordered an aqueous solution, 1 per cent of the same as spray three times a day, and the local application of an oily solution of menthol, thymol, camphor, eucalyptus and benzoinol in order to allay the pain.

The tubercles ulcerated and healed within two weeks, leaving pits that looked like the pits of smallpox. The throat became normal in appearance, except for this and deglutition could be accomplished with comfort. I made a diagnosis of miliary tuberculosis, from which the patient died early in April, but there were no disturbances of the throat during the latter part of her illness.

Case 2. J. E. H., aged 31 years, salesman. About the first of November, 1914, noticed that he had some huskiness of the voice with a slight cough. Diagnosis of acute laryngitis was made and a spray was ordered which gave temporary relief; treatment was discontinued with return of the symptoms and this was again treated with alkaline sprays but did not effect relief as in the earlier treatment. Dec. 29 he called on me and the throat showed only an acute laryngitis with swollen right arytenoid and red cords.

A solution of 1 per cent formalin in water was ordered t. i. d. by atomizer and a local application of 5 per cent formalin-glycerine on a laryngeal applicator. On account of the necessity of using his voice, I strongly recommended a change of employment to that of bookkeeper or something else which would allow the complete rest of his voice, but under the treatment the lesions are looking better and the subjective symptoms are not so distressing.

Case 3. R. W., aged 33 years, telegraph operator. Left vocal cord a dull red with ulceration between middle and posterior third with extension up on the ventricular band of same side which appears to be very thick. Right cord has ulceration opposite that of the left but the color of the rest of the cord is more nearly normal.

This case was being treated with tuberculin by another physician who desired me to give the local laryngeal treatment, which consists of the application of the 5 per cent formalin-glycerine solution to the larynx twice a week, on account of his living in another city, and the use of a 3 per cent solution of the same t. i. d. in an oil atomizer. After the first month the condition has made a steady gain in function and appearance, though the patient is still hoarse when speaking.

Case 4. Mrs. C. I. J., aged 50 years, Complains of voice fatigue within short conversations. Has a cough, but no expectoration, tuberculin reaction positive, treatment same as in the other cases with a gradual improvement.

Case 5. Mrs. Wm. McG., aged 35 years. When called to see this case she complained of radiating pains to the ears, abundant secretion in the throat, cough and tickling; she had been cocaineized to take food and this had become unavailing.

Examination showed deep ulceration on left side of larynx involving the cord, ventricular band and ary-epiglottic fold and complete erosion of the left side of the epiglottis. The remaining part of the epiglottis was thickened and showed superficial ulcers on crest and on posterior surface.

Treatment in this case was then directed to the removal of the offending epiglottis, which I did with a snare having a curved tip.

The relief was almost immediate and complete. She had reached the stage when starvation under the most painful conditions was imminent and the epiglottis operation saved her untold suffering and prolonged her life for six weeks.

Case 6. T. O. H., aged 27 years, farmer. Two years ago began to notice a decline in his health but without pulmonary signs, was advised to go to the Rocky mountain region for his health; he remained in the west for about 18 months when he returned to Illinois much improved last fall. Within a month he developed a sore throat which did not clear up under the routine treatment. Repeated examinations failed to reveal any pulmonary lesions, the throat became worse; to the soreness was added hoarseness and later a decided odynophagia which prevented swallowing anything and at this point I was sent for. March 12, examination showed temperature 102, pulse 120, blood pressure 120; still no pulmonary signs obtainable.

The right tonsil was eaten away to the base on its anterior side in an undermined and ragged manner, typical of tuberculous lesions. The vocal cords were invisible, due to the infiltration of the epiglottis and thickened ventricular bands; these were covered with ulcers from the broken down tubercles. Reflex pains radiated to the ears and locally the pains were intolerable on the slightest movement of the muscles in swallowing.

I cocaineized the epiglottis and amputated it with a cold wire snare and saw the patient drink in com-

parative comfort the first liquids for three days.

This patient lived a month and ten days.

In primary lesions of the larynx I should recommend the removal of the epiglottis as soon as it became certain that it is involved to the extent that local medical treatment is unable to secure the function of swallowing in comfort. I am sure that such procedure will prolong the life and comfort of the patient.

SYMPOSIUM ON TUBERCULOSIS.*

J. C. R. WETTSTEIN, M. D.,

EFFINGHAM, ILL.

Urologist to St. Anthony's Hospital.

Mr. President, members of Clark County Medical Society, it gives me great pleasure to be with you again to discuss one of the most interesting diseases of the day, namely tuberculosis.

As a definition tuberculosis is an infective disease due to the deposition and multiplication of tubercle bacilli in the tissues of the body. A tubercle is a non-vascular infective focus, appearing to the unaided vision as a semitransparent gray or yellowish mass the size of a mustard seed. The tubercle bacillus was discovered by Robert Koch in 1882. It is a little rod with a length about equal to one-half of a red blood cell. It is nonmotile, does not form spores, and requires oxygen to grow, but it may obtain oxygen from body-cells or fluids. It exists in all tuberculous lesions, and the more active the process the greater their numbers. Koch in 1891 asserted that the bacillus of human tuberculosis differs from the bovine type; that human tuberculosis cannot be transmitted to cattle at all, and that it is so difficult to transfer bovine tuberculosis to the human being that the danger from infected cattle is trivial and may be disregarded. Ravenel and others have positively opposed this view of Koch's, and there has been reported what appears to be undoubted cases of the transference of tuberculosis from animals to man. There is still dispute upon this point, but most writers believe that bovine tuberculosis and human tuberculosis are essentially the same, although bacilli present temporary differences due to altered environment. The bacilli of bovine tuberculosis are certainly far less dangerous to man than are the bacilli of human tuberculosis, and

the bacilli of human tuberculosis are vastly less dangerous to cattle than are the bacilli of bovine tuberculosis. Human bacilli introduced into cattle may produce chronic lesions, but they are always non-progressive. Nocard reports two cases of individuals who wounded themselves while cutting the flesh of tuberculous cattle. Both developed generalized lesions and died. Ravenel strongly opposes the view of Koch and maintains that the bacillus of bovine tuberculosis is highly pathogenic to man. The same author has reported four cases of undoubted inoculation in the hands of veterinarians. The entire question is of vast importance, for, if Koch is right in his views then there is practically no danger of eating tuberculous meat or drinking tuberculous milk. Most observers endorse the words of the British Commission of 1904 in which they maintain that bovine tuberculosis can be communicated to man.

The bacilli of bovine tuberculosis, when they find lodgment in human tissues, are apt to produce local lesions and seldom disseminate, and vice versa. It has been proved that many cases of tuberculous adenitis in children, but only 3 per cent. in adults, are due to bovine tuberculosis; 50 per cent. of cases of abdominal tuberculosis in children and 20 per cent. in adults are due to the bovine bacillus.

Some bone cases and a considerable number of joint cases in children depend upon the bovine bacilli, but very few in adults are so caused. Pulmonary tuberculosis very seldom depends upon the bovine organisms. It is thus clear that human infection with bovine bacilli is most common in the young, and that surgical tuberculosis is far more apt to have such origin than other forms. Tubercle bacilli from an infected individual may get into the atmosphere from the urine, the sputum, the feces, the sweat, the milk, caseous or purulent material. The infected area itself is usually the direct source of the bacteria from a given case of tuberculosis, but this is not invariably so; for a tuberculous woman with a healthy mammary gland may secrete milk that contains tubercle bacilli; a consumptive free from genito-urinary tuberculosis may occasionally pass urine containing bacilli; a cow may give tuberculous milk when the udder is not diseased.

An individual may acquire tuberculosis by inhaling tuberculous material, by swallowing tu-

*Read before Clark County Medical Society, Feb. 11, 1915.

tuberculous material, and by inoculation with tuberculous material. Infection of the lungs may be brought about by the inhalation of dried tubercular sputum, and ingestion tuberculosis may follow the eating of tuberculous meat, the drinking of tuberculous milk, or the consumption of uncooked articles on which tubercle bacilli have gathered. It has been shown that the lacteals may take up tubercle bacilli from the intestine, even if there is no intestinal lesion; and that the bacilli can pass through the thoracic duct and into the blood, and lodge in some tissue, particularly the pulmonary tissue, so inducing tuberculosis. They are apt to lodge at any point of least resistance; and if not caught up in the lungs, will tend to be arrested in an irritated gland or in some region that has been the seat of some recent injury, e. g., in an epiphysis that has been bruised.

The diagnosis of early pulmonary tuberculosis in this discussion may be defined as the recognition of a focus of incipient tubercular inflammation, and also recognition of the first advances of a recrudescence of an arrested or latent lesion.

It is axiomatic in tuberculosis that the greater the number of early diagnoses, the greater will be the number of recoveries; conversely, it may or may not be a hyperbole to state that the presence of advanced tuberculosis presupposes failure of early diagnosis, allowing of course for the virulence of the infection and the fighting qualities of the patient's organism. However, it does not require the force of exaggeration to emphasize the all too well recognized fact that in a most pitifully deplorable number of instances lives are lost because the physician has not made himself familiar with the easily elicited signs of beginning tubercular infection. Advanced tuberculosis may also mean neglect upon the part of the medical advisor to enforce a rigid regime of treatment at first. Misdirected pity too often compromises judgment.

Incipient tuberculosis does not manifest itself by any one pathognomonic sign as does the advanced disease by the presence of Koch's bacillus in the sputum, but its recognition depends upon the scrutiny of a complex picture the parts of which are with painstaking care elaborated from the history of the patient and his associates, the story of his former life, the various subjective symptoms of which he may be aware and

the physical changes produced by his malady. In a word, the secret of early diagnosis depends upon adherence to a systematic scheme of case taking and then a consideration of the patient's rational symptoms and the physical signs.

A word about tuberculosis in children. The work of Von Pirquet laid the foundation for the now generally accepted statement that by the age of sixteen years practically all children have had tuberculosis, so disease of the adult is very likely to be a lighting up of a previous infection which an attenuated state of the individual's resistance or a reinfection by repeated contact with other tubercular individuals and the onslaught of overwhelming numbers of bacilli has brought about. Such lowering of resistance frequently follows measles or whooping cough in children or typhoid, overfatigue, etc., in the adult. The consideration of tuberculosis in children means particularly a search for glandular tuberculosis, especially swelling of the glands at the base of the lung and in the mesentery.

The more we study the pathology of tuberculosis the more firmly we are convinced that there is a time when every case is almost a curable case if only the proper means are instituted under the proper conditions.

Most of the exceptions to this statement are found in the early cases of tuberculosis produced by an exceptionally virulent strain of the bacillus or by the inoculation of enormous numbers of bacilli. Under all other conditions, after the infection occurs, the organism regains a temporary advantage, which, if followed up, could usually be turned to a lasting result. If ever we are to make headway in the treatment of tuberculosis it must come through the recognition and understanding of its early pathology. We must emphasize the latent stage of the disease. We have been so thoroughly taught that syphilis may be present without producing symptoms and yet be a dangerous disease, that this knowledge is common property. So must the same fact be impressed upon the medical profession as regards tuberculosis.

The earliest form of tuberculosis, as we find it pathologically, is that which affects the lymphatic glands, the bacilli having passed through the tissues, usually the mucous membrane of the air passages or alimentary canal, without producing lesions, or producing small lesions, as

Gohn has recently shown to be the case in the lungs. This lymphatic form of tuberculosis, affecting chiefly the glands of the large cavities of the body, cannot be diagnosed by physical examination nor x-ray unless the glands are of considerable size, so it is not safe to rely upon such procedures; neither do they produce unmistakable clinical symptoms.

Fortunately, the tuberculin test can be employed and the results obtained by it can be relied upon to give evidence of the presence of tuberculosis under these circumstances. Of course it does not locate the lesion.

Of the various methods of employing the tuberculin test I prefer the cutaneous as suggested by Von Pirquet, because of its simplicity and ease of administration, although I am inclined to believe that the subcutaneous is the most reliable of all. The interpretation of the Von Pirquet skin reaction is very important. I know that it is usually said that the Von Pirquet skin test is of no value in adults, but Pottenger says it is of great value and he also says it is the only test that he relies upon. The statement of the worthlessness of the test in adults is based upon the fact that a very large percentage of adults will react to tuberculin owing to the fact that a very large percentage of them have been infected during their lives. I do not think that much is to be gained by a simple reaction; but, if the character of the reaction is taken into account and the time of the reactions, appearance and the course the reaction takes, I believe that we can derive very important information from this test. According to our experience, a marked reaction to the skin test which comes on promptly within a very few hours after the inoculation and increases, reaching its maximum within the first twenty-four hours, I should say, is very indicative of an active lesion. Still a slight reaction on the other hand or one which comes on slowly, beginning to show late in the twenty-four hours and then increasing, reaching its maximum the second day or even later; most authorities consider this as an inactive stage. I am inclined to consider that much is to be gained by the character of the reaction. A very faint reaction is more apt to be due to a focus that is not very active, while a frank reaction is more apt to be indicative of an active lesion. Of course there are conditions that a patient is under which

will not react, such as cachexia, and when a patient is recovering or suffering from numerous infectious diseases such as measles, scarlet fever, diphtheria, spinal meningitis, but notably measles. But if these exceptions are kept in mind I believe that we can interpret this reaction in such a manner as to furnish us valuable information. This interpretation of the tuberculin test has tallied with most authors based on the physical examination, the muscle signs and the clinical history. In my statements regarding the reliability of evidence based upon the character of the tuberculin reaction I am considering only early tuberculosis where the test is considered necessary to confirm or disprove the diagnosis which has been based on other examinations. This must not be expected to hold true in advanced tuberculosis. Further I would say that these statements apply to those patients who are in fairly good physical condition rather than those who are badly run down. In several instances we have found patients who were badly run down, weak, anemic, with loss of flesh, who, although suffering from active tuberculosis, reacted only slightly to the tuberculin test.

When it has been determined that a patient is suffering from active tuberculosis, I can say, without fear of contradiction, that such a patient should be kept under a physician's surveillance until healed. I believe the same should be done in instances of latent tuberculosis, although this statement, I fear, will provoke controversy. Why should we treat the tuberculous patient differently from other patients? Why should we not be fair to him and to our profession and give him the benefit of our best knowledge? The members of the medical profession are constantly looking out for diagnosis and treatment of latent syphilis; for the prompt recognition and operation of chronic or quiescent appendicitis; for the recognition of symptoms which are supposed to foreshadow arteriosclerosis or a chronic nephritis. Then why should they not treat latent tuberculosis with the same degree of seriousness? Whether our profession agrees with me on the necessity of the treatment of latent tuberculosis or not I am sure that it will recognize the value of the knowledge to be gained by knowing that latent tuberculosis is present, especially in children who are not developing properly. The parent or the physician having such knowledge re-

garding a child would unquestionably be more careful with him and be more prone to suspect active symptoms of clinical tuberculosis earlier than when such knowledge did not exist.

Not only have we failed to give the lymphatic form of tuberculosis the attention which from its importance it deserves, but we have even been negligent in our treatment of it when it spreads from the lymphatic system and attacks other parts. After it has thus extended it often assumes a latent form again, producing no symptoms that we have learned to recognize until the process has become more or less active. The presence of these secondary foci may be determined when comparatively small by careful examination, provided they produce recognizable symptoms which direct the attention to the parts affected. It is not uncommon after these new foci have been formed for the process to again assume a state of quiescence or latency and again assume such a condition that the tuberculin test is our most dependable method of obtaining a judgment.

It can be seen from this discussion that there is much that can be done towards recognizing the early infection and preventing clinical tuberculosis that is not being done. Our attention should be turned to the early infection, the latent condition and the early extensions of this disease that we may prevent the advanced disease that we are so often fighting now. The diagnosis of pulmonary tuberculosis has now reached such a degree of accuracy that nearly all lesions can be diagnosed while still small and before the tubercles break down and produce bacillus bearing sputum. That only a small proportion are so recognized is proof that the patient suffering from tuberculosis is not getting the best that we as a profession are able to give. The blame of this is not all to be placed on the profession of medicine either, but our just proportion of blame is far more than it has any right to be. We recognize that the patient is often slow in presenting for examination when early symptoms develop. We also know that he is very prone to question an early diagnosis when made; but this does not free our consciences from the countless early cases of active tuberculosis that we as a profession are daily overlooking. It is our duty as a profession to diagnose correctly nearly all cases of incipient tuberculosis that consult us.

We may not be able to do it individually, but collectively we can and must. The laymen who place their confidence in us have a right to demand this, and we, as a profession, are abundantly able to give it.

The clinical symptoms are sufficient, in most instances, to cause tuberculosis to be suspected. When suspected we have other methods of diagnosis by which we can almost positively form a correct opinion. If the attending physician is not sufficiently conversant with them, fortunately, now, we have men in every large community and in many small communities, who are capable of giving an accurate opinion. My plea for the more general use of the consultant applies equally in every branch of medicine. We too often fail to give our best services to a patient because we fail to recognize our own limitations, then fail to call assistance at the time when assistance could be of some avail.

I wish to mention a few of the more common symptoms complained of by patients suffering from early active tuberculosis. While all are rarely present, usually two or more of the following will be: Malaise, a feeling of being run down, lack of endurance, frequent and protracted colds, hoarseness not due to laryngeal disease, slight indigestion with loss of a little weight, aching between shoulders, tickling in the larynx causing clearing of throat, or dry hacking cough, night sweats, slight rise of temperature, spitting of blood, and pleurisy. Any combination of two or more of these should make the physician think of tuberculosis and request that it be eliminated before a definite diagnosis be made. A spitting of blood or pleurisy should be considered as indicating tuberculosis unless definitely proven otherwise.

It is probable that an explanation of the etiological factors in the above symptoms might be of some value in facilitating early diagnosis. I believe that the common early symptoms which I have enumerated may be divided into three groups based upon their etiology.

Tuberculin Toxins	Hoarseness
Malaise	Indigestion
Feeling of being run down	Chest pains, especially in shoulders
Lack of endurance	Tickling in the larynx
Nervous instability	Cough
Indigestion	

Night sweats

Increased pulse rate

Increased pulse rate

Reflex

Tuberculous involvement per se: Frequent and protracted cold. Spitting of blood.

Given a suspicious clinical history the physician should examine any mucus raised from the throat no matter how slight. A 24-hour sample is best and it should be allowed to stand for 24 hours at room temperature, or better, in an incubator so as to become homogenous before examining it. In asking for this do not be deceived by the patient saying that he does not raise anything, or it's only from the throat; examine and see. While bacilli should not be expected regularly, they will be found often enough to pay for the trouble.

The tuberculin test should be applied as a routine measure in the examination of all patients who show signs suspicious of tuberculosis. Every physician who comes in contact with these cases should know how to use this test, or if he does not know he should refer them to someone who does. If a given patient should show a reaction, then it should be determined, according to the plan mentioned above, whether or not the case is active or quiescent.

If possible, in all cases the lesion should be located. The lungs should be examined where tuberculosis is suspected. In reference to the examination of the lungs it seems necessary to still emphasize the necessity of examining the chest bare. While nearly all chest specialists of any note do this, I find many men who, for lack of training and experience, would have far more difficulty in giving an opinion, persist in making chest examinations through clothing.

It would seem needless to say that such an examination is not worth the dollar or two dollars charged for it. One who is not constantly examining for the fine changes in the lung should not be expected to find early tuberculosis by percussion or auscultation. This is no reflection, simply a truth, which must be recognized, for if a man depends on his chest examinations and finds nothing and gives his opinion that tuberculosis is not present, he will do his patient untold harm. It is not an uncommon thing for a physician to suspect clinical tuberculosis by the clinical history, then, when he examines the chest, finding nothing, reverse his opinion. He

should not do this. He should not allow his judgment to be overturned and his opinion to be changed by his failure to find the early changes that occur in the lung in pulmonary tuberculosis.

I would suggest two signs: one an old one for which I offer a new explanation, the other a new one which was first described by Dr. Pottenger, as offering great aid in diagnosing early changes in the lung. When these are once appreciated, I feel sure they will greatly facilitate early diagnosis. These signs are lagging of the affected apex and side, and spasms of the muscles covering the apex. Both of these, according to my view, are due to the same etiological factor, a reflex spasm, the production of which is analagous to the spasm of the abdominal muscles in intra-abdominal lesions. They are described as an expression of nature's attempt at defense and are able to produce a considerable degree of rest for the affected side. The reflex is caused by the impulse which is produced by the inflammation in the lung and carried to the cord by the sympathetic fibers.

There it sets up an irritation in the cord which affects the cells from which the motor fibers take their origin, thus producing an irritation of these fibers which go to muscles. The trapezius and sterno-cleido mastoid are the two muscles which best show the spasm. They have a second reflex path through the spinal accessory, fibers of which supply these two muscles and are also found in the vagus.

Experience that those muscles which take their nerve supply from that portion of the cord which receives the impulse from the lung, are disturbed in their equilibrium. This is shown as a contraction or spasm when the inflammation first starts or while it is in a state of activity and in a state of degeneration after the disease becomes chronic. The muscles which are usually disturbed in their action in early apical lesions are the diaphragm, which is supplied by the phrenics which take their origin from the third and fourth and fourth and fifth cervical roots, the scaleni, sterno-cleido mastoideus, trapezius, levator anguli scapulae, all of which receive their nerve supply from the second to fifth cervical segments of the cord, this being the portion of the cord which receives the impulse from the lung.

The spasm of these muscles then is found whenever an inflammation exists in the lung. This spasm may be detected in the muscles covering the apex of the lung both by inspection and palpitation. On inspection oftentimes the sterno-cleido-mastoid, scapular, and trapezius stand out more prominently than they should and on palpitation are distinctly firmer than normal. The altered function of the diaphragm results in a lagging of the side of the chest involved. This shows itself not only in the lagging of the apex but lagging in the entire chest wall.

In order to determine the condition of the muscles it is necessary to have the patient stripped to the waist and sitting comfortably on a chair with his hands in his lap so that all the muscles are relieved of tension. I believe that these phenomena when once understood by the profession will aid greatly in the early diagnosis of tuberculosis.

Early diagnosis should bring early treatment, and early, intelligent treatment means the cure of a very large percentage of those suffering from clinical tuberculosis. The early treatment of incipient tuberculosis means a favorable result in 70 to 90 per cent. of cases, according to the statistics of various institutions. It is necessary that the medical profession should understand this and give these patients the benefit of treatment at the proper time. The treatment of tuberculosis at best is a tedious and costly process. The cure is slow, and, if the disease becomes advanced, it is very uncertain; and it is attended by so many complications, discouragements and disappointments that it is difficult to keep the patients good long enough to get a favorable result.

It is the duty of physicians and laymen to cooperate thoroughly so that we may give those suffering from this dread disease advantage of the best scientific treatment that we are able to administer during the early stage of this disease when it is possible to restore nearly all to health and usefulness.

As a profession we know a great deal about the prevention of tuberculosis. We feel confident that theoretically it can be prevented, but actually the prevention is taking place very slowly. To be sure the disease is lessening, but it is not lessening to the extent that it should with the

knowledge that we possess. With a thorough recognition, however, of the character of tuberculosis, its lymphatic stage, its latent stage, its slow advancement into other parts of the body, and a full recognition of our ability to diagnose the disease before the marked clinical symptoms have appeared, and a thorough comprehension of what can be done in the treatment of early cases, the future should promise a more rapid decrease in morbidity and mortality.

TUBERCULOSIS IN CHILDREN.*

O. W. McMICHAEL, B. A., M. D.,

Associate Professor of Medicine, Chicago Polyclinic.

CHICAGO.

The function of lymphoid tissue is intimately associated with catabolic processes, and lymph nodes are storehouses for materials that must be destroyed, but if destroyed too rapidly, will produce severe toxic effects. If we remember that the efferent lymph vessels carrying materials to a lymph node are of smaller caliber and enter at the periphery of the gland while the efferent vessels are of larger caliber and leave the gland at the hilus, we may deduce that the tension of the lymph stream entering the lymph node is higher than that leaving the gland. The lymph node acts somewhat after the manner of a reducing valve and part of its function is to slow the lymph stream and to retain in its meshes substances which require time for disintegration.

Hypertrophy is the first sign of overwork. Whenever unusual demands are made upon an organ it increases in size and this is as true of glands as of other organs. Whenever we find an enlarged gland we have one in which the intake is greater than the output and when the overload capacity of the organ has been reached, the work passes on to the next node in the chain and here the process is repeated.

The capacity of the lymphatic system to disintegrate and destroy body cells which have served their purpose in the human economy and must be eliminated is so great that this normal function, seldom, if ever, makes sufficient demands upon the lymph nodes to produce hypertrophy extensive enough to make the glands papable, and it is only when foreign proteid has been introduced requiring the development of new

*Read before the Chicago Medical Society, April 28, 1915.

enzymes for their disintegration, that it is necessary for these new materials to be temporarily stored. Infectious organisms are the chief foreign substances which find entrance to the human body and whenever we find palpable glands we may reasonably assume infection. Then comes the problem of determining what is the infecting organism, for certain groups of glands, and in general, the regional lymph glands near the avenues of infection are first involved, and serve to guide us in determining the character of the infection.

Of all the infectious organisms which invade the body the tubercle bacillus is by far the most common, so common in fact, that it is generally admitted that practically all children become infected with the tubercle bacillus before the age of fourteen and this is our first thought when we find palpable glands in children.

The study of tuberculosis in children is the study of the period between infection and the first evidence of disease, and it is important that we make careful differentiation between tuberculous infection and tuberculous disease. What do we mean by "infection" and what do we mean by "disease?" If we accept the definition that infection is "the implantation in the tissues of the body of living pathogenic organisms, in such a way as to favor their growth and permit their toxins to injure the tissues," and that disease is "any departure from a state of health," then in tuberculosis, from infection to disease is a long way to go.

Infection may take place in childhood and disease appear in adult life. We have, then, this long period with its various manifestations which has so often been characterized as the "pretubercular stage," a term which we will do well to promptly discard from our literature.

An individual is either tuberculous or he is not. The symptomatology of the pretuberculous condition is a classification of the evidence of pathological changes that have resulted from the damage to the tissues, produced by the toxins of the tubercle bacillus, and these changes are not, as is so often stated in the literature, evidences of physical characteristics which predispose to tuberculosis, but are rather the evidence of the slow development of tuberculous disease.

With a full realization of this truth it is as difficult to accept the theory that certain indi-

viduals possess a predisposition to tuberculosis, as it is to accept the idea that certain individuals are predisposed to typhoid, smallpox, or other infectious diseases. The question immediately arises, "Why then do certain families show such a high percentage of morbidity to tuberculosis?" and the answer is "Opportunities for infection." A family with one case of smallpox will show as high a percentage of morbidity as will one with one open case of tuberculosis, with this difference, that the patient with smallpox is sick, and his condition is recognized, while the "open" case of tuberculosis may be in a state of seeming good health for years.

The term disease is a relative one and in tuberculosis the progress from infection to disease is so insidious and the pathological changes so slight that herein lies the basis for the endless differences of opinion regarding tuberculosis and what constitutes tuberculous disease.

We have on the one hand those who will not admit that disease exists until the patient is actually sick, and on the other, those who accept the earliest evidences of pathological change, and decide that then is the time to take active steps in the way of treatment. That those who hold either of these views can ever meet upon a common ground of agreement is not to be expected.

The misconception that tuberculosis is steadily progressive has added greatly to the difficulties of understanding the disease. Its course is not constant. It begins, makes a certain degree of progress, remains stationary for indefinite periods of time, makes a little further progress and again becomes quiescent, and so on often over long periods of years. This erratic rate of progress makes it difficult to estimate the value of therapeutic procedures, and we are often at a loss to know whether the manifestations of improvement in a given case are due to remedial measures we have employed, or are merely the result of one of the spontaneous periods of quiescence so common in tuberculosis. The true test of any remedial measure can only be by its application to a sufficient large number of cases and over sufficiently long periods of time to render negligible this particular factor.

In a similar manner, our knowledge of the early manifestations of tuberculosis in children must come through the formation in our minds of a composite picture, resulting from the systematic

study of large numbers of children who have been exposed to contact with open cases of tuberculosis. This opportunity is offered in our Municipal Tuberculosis Dispensaries, where it is the custom to systematically examine all the members of the family where one member is found to be tuberculous.

Before considering in detail the physical characteristics of the children of tuberculous families, let us see how the tubercle bacillus escaping from an original host becomes implanted in a new individual. The opportunities for infection by dust inhalation and by ingestion are numerically so much greater than in any other way, that other modes of transference are hardly worthy of consideration. The breathing zone of the child is so much nearer the floor that he, more than an adult, is exposed to droplet infection on its downward course, and to "raft" infection by tubercle bacilli floating on specks of dust rising from the floor, so that the younger the child the greater his exposure to infection. Add to this the ingestion of tubercle bacilli deposited upon the food by a coughing parent, or transmitted from the hand of the parent to the hand of the child, and thus to the food, and it is difficult to see how any child housed with an open case of tuberculosis, can escape infection and daily reinfection.

There are two points on which we must re-adjust our views if we would comprehend the invasion of the human organism by the tubercle bacillus and these are "initial lesion" and "point of entrance." So far as initial lesion is concerned, it is as far fetched to consider, as the initial lesion, some break in the integrity of the mucous membrane as the only avenue of entrance of the enemy, as it would be to regard a broken fence along one of a hundred open highways into a city as the point of entrance of an invading army, or to select a particular hole in a sponge as the place where water gets in.

It has been abundantly proven that the tubercle bacillus can pass through the mucous membrane without leaving any trace behind and I want to call attention here to the dangers of misconception when we invest the tubercle bacillus with the power of attack. The tubercle bacillus is not endowed with motility and cannot pass through the mucous membrane without being carried through by some cell possessed of the power of passing the barriers of a resisting membrane. The

tubercle bacillus is seized upon the surface by the phagocyte and carried through into the lymph spaces, and in the effort to digest and utilize its constituent elements of fat and proteid, the tubercle bacillus is either digested and destroyed, or the leucocyte dies. Upon the death of the leucocyte, this cell, together with its ingested tubercle bacilli is attacked by the endothelial scavenger cell, which can disintegrate the dead leucocyte, but cannot harm the contained tubercle bacilli. The tubercle bacilli are set free to be again attacked by other leucocytes and carried to the neighboring glands.

Having been carried through the mucous membrane into the lymph spaces the organisms follow the lymph stream and find lodgment in the glands. Here they develop very slowly because of two factors; first, lymphoid tissue is relatively deficient in oxygen and the development of the tubercle bacillus under anaerobic conditions is exceedingly slow; the second factor of very great importance is the absence of fat in the lymph stream and the tubercle bacilli is deprived of a necessary element of food. These two factors explain why the tubercle bacillus may remain in the glands for years so that one infected in childhood may show little evidence of infection until adult age is reached. While the development of the tubercle bacilli is inhibited it is not entirely suppressed and they may later multiply to such a degree that some escape. These follow the regular course of the lymph stream till eventually they reach the thoracic duct, and thence into the venous blood stream. Here acted upon by agglutinins, numbers of tubercle bacilli are clumped and it is these clumps which form thrombi in the radicles in the lungs. Here we have another defensive process of the organism, characterized by the attacks on the thrombus by the body cells, resulting in the formation of tubercles. This describes the fate of only the clumps of tubercle bacilli which reach the small peripheral capillaries. The many isolated and single bacilli which are free in the blood stream may be carried to remote parts of the body, producing joint and bone tuberculosis, or be disintegrated and destroyed in the blood stream, or seized by the phagocytes and carried to the bronchial glands. This explains the presence of tuberculosis in the bronchial glands and particularly their presence in the enlarged glands at the hilus. I desire to

emphasize at this point that the theory of extension from the glands at the hilus to the periphery of the lung is untenable except we conceive it to be by way of the thoracic duct and the venous blood stream.

While it is generally true that in experimental infections the course of the infection can usually be traced to the regional lymph glands it is by no means always so. In one of my experimental animals, infected intraperitoneally with a hundredth of a milligram of tubercle bacilli, at autopsy not a single macroscopic tubercle could be discovered below the diaphragm though the lungs were completely infiltrated, so the absence of involvement of the mesenteric glands does not prove that pulmonary involvement was the result of an inhalation infection rather than infection by ingestion.

Inasmuch as the first resting place of the tubercle bacillus is always in lymphoid tissue, it is to the glands we must first give our attention in the examination of children for tuberculosis. Glandular enlargement is found in all children who are in contact with open cases of tuberculosis. In these children the sub-maxillaries, anterior and posterior cervicals, axillary and inguinal glands are sufficiently enlarged to be readily palpable. While this is universally true of children exposed to tuberculosis, it is also true that these glands are enlarged in nearly all children. The presence of enlarged glands by no means proves tuberculosis. Hypertrophy of glands is the evidence of combat against infection and if there is any distinction to be observed between the glands of tuberculous children and the enlargement of glands due to other infections, it is that in tuberculosis, the palpable glands are smaller and firmer than those of non-tuberculous children and may be traced along the course of the lymphatics as small firm beads. These glands tend to disappear as the evidence of pulmonary involvement increases, so that in children with extensive pulmonary involvement, glandular enlargement may be very slight and distinctly less than the glandular involvement of the average child. I have come to regard the disappearance of glandular enlargement without the development of pulmonary signs as evidence that the condition was non-tuberculous, and in tuberculous children the shrinking of glands with an in-

crease in their density as evidence of favorable progress toward the control of the disease.

The tendency to regard anemia and malnutrition as evidence of tuberculosis is very apt to lead us into error, for in family groups of children known to be exposed to open cases of tuberculosis, it is exceedingly common to find that the best nourished and least anemic looking children are the ones who present most evidence of active tuberculous disease, as shown by pulmonary findings, high temperature and sensitiveness to tuberculin. With these contradictory indications it is not surprising that there should be so much difference of opinion concerning the diagnosis of tuberculosis in children and safe conclusions can only be reached by summing up all the factors which may give light upon the subject.

The general appearance of the child should first be considered. Upon careful inquiry it will be often found that one of the first things noticed by the observant parent was that the child stopped growing; this is borne out by careful measurements of tuberculous and non-tuberculous children. The tuberculous child is usually undersized and underweight for his age, though it must be borne in mind that the reverse may be true with regard to this or to any other single factor which may tend to prove tuberculous disease.

The posture in standing is relaxed and alar scapulæ are present in nearly all tuberculous children. The hair and skin are dry in children who show more pronounced evidence of disease. No matter how well nourished, the tuberculous child has a weary expression about the eyes, the lower lid may droop sufficiently to show a line of sclera below the cornea and I have long noted a bluish-pink triangle with the lower lid as its base, which I have come to regard as a distinct sign of tuberculosis in children. This bluish-pink triangle is as distinctive in its tint in tuberculous children as is the china-blue-white sclera of the tuberculous individual, in comparison with the gray-white sclera of the simple anemic.

The pupils of the tuberculous child are usually dilated and markedly dilated if the child is noticeably toxic. If inequality of the pupils is noticed, one may suspect pulmonary activity in the apex on the side on which the dilatation is more marked. In adults, dilatation of one pupil will

often be found to precede signs of activity in an apex.

Discharging ears, of tuberculous origin, excoriations within the nose and about the alae nasi are common in children who are exposed to massive and repeated infections and these should be regarded as open cases of tuberculosis.

The mouths of tuberculous children show an average of five bad teeth and the diseased gums about the carious teeth form easy avenues of entrance for the tubercle bacilli as well as for other organisms.

The tonsil has been much discussed as the portal of entrance, for tuberculosis. It is only one of many points of entrance and the decision as to whether it should be removed or not depends upon other factors, rather than upon the possibility of its harboring some tubercle bacilli. Of one thing I am convinced however, and that is, that no tuberculous child should be subjected to a surgical operation upon tonsils or tuberculous glands until an attempt has been made to raise the immunity of that child against tuberculosis, by the administration of some preparation derived from the tubercle bacillus.

In the examination of the chest our attention is first struck by the dilatation of the superficial veins usually associated with marked enlargement of the mediastinal glands. A further evidence of this enlargement is Smith's sign, which consists of a systolic murmur produced at the right border of the manubrium when the head is thrown back. The chest examination differs little from that of the adult with the exception perhaps that it reveals the greater frequency of tuberculous deposits in the bases of the lungs of children than in adults. The more general bronchitis I find in a child, the less inclined I am to interpret it as evidence of tuberculosis, while fine, moist rales confined to a small area in a lung may be regarded with grave suspicion.

No matter how expert we may be in the interpretation of physical signs, we can obtain more direct evidence of tuberculous disease by the use of tuberculin than in any other way. This phase of the subject is worthy of more extensive consideration than can be given within the limits of this paper and I shall content myself with presenting as a preliminary report some of the conclusions drawn from a study of more than seven thousand von Pirquet tuberculin tests, applied

to about five thousand individuals, both children and adults.

The von Pirquet skin reaction has the same significance in adults as it has in children. It is a serum reaction and expresses a certain property possessed by the blood, and from this reaction we are not justified in drawing any conclusions regarding the presence of a given tuberculous focus, and we are no more justified in concluding that a positive von Pirquet reaction indicates the presence of a tuberculous focus than we are in concluding that, because we have a positive Wassermann reaction, our patient has a leptic sore throat. The mere statement that a von Pirquet reaction is positive or negative gives us little information, but if we will make a careful study of the character of the reaction produced, we will obtain valuable information regarding the defensive processes going on in the blood of the patient, and if we can predict from our physical examination and other obtainable facts the character of the reaction we should expect, then the skin reaction will prove a valuable aid. Furthermore, since it can be predicted from the character of the reaction in either an adult or a child how many milligrams of tuberculin will produce a systemic reaction, then the reaction may be regarded as of diagnostic value in adults as well as in children.

A poorly nourished child under one year of age in the arms of a tuberculous mother who is an open case, will usually give a negative von Pirquet reaction. A tuberculous patient who gives a slight reaction will, after the continued administration of some preparation derived from the tubercle bacillus, give reactions of increasing intensity which coincide with other physical signs of improvement, and on the other hand the tuberculous patient who is losing ground will show reactions of decreasing intensity and will finally fail to react at all. A negative reaction in a child is not conclusive evidence that the child is non-tuberculous any more than a positive reaction is evidence that the child is the victim of tuberculous disease. The value of the skin reaction is dependent upon the skill of the observer.

The use of tuberculin promises more in the treatment of children than any other remedial measure and by tuberculin I mean those substances prepared from the tubercle bacillus.

I find it difficult to understand the attitude of

mind of those who believe in the efficiency of vaccines and yet do not believe in the value of tubercle preparations for they are essentially vaccines as we now use the term.

Children bear large doses of tubercle proteid better than adults and if we hope to stimulate the production of immunity we must give appreciable doses. This is especially true if operative procedures are contemplated and it is desired to enable the blood of the child to take care of any tubercle bacilli that may be squeezed out into the circulation by the manipulation incident to the operation. It is unwise to undertake any surgical procedure until a child can endure a dose of 0.4 or 0.5 milligram of tubercle proteid without severe reaction.

Operations upon the glands are usually resorted to when caseation is present and often without a full consideration of what produces caseation, which may be regarded as a phenomenon of partial immunity. We can produce caseation experimentally at the site of injection by the introduction of sterile fats extracted from the tubercle bacillus, and we have a parallel to this procedure, when by the subcutaneous injection of too large a dose of bacillen emulsion, we produce in certain tuberculous patients who have partial immunity, a small cold abscess containing a few drops of sterile pus at the site of injection.

The significance of this is, that the patient has amboceptor for tubercle proteid, but none for tubercle fats. Caseation occurs only when tubercle proteid has been disintegrated by lysins, leaving undisturbed the lipoids which have the property of producing necrosis when in concentration. This explanation accounts for cavity formation and caseating process in glands.

The practical point to be remembered in this connection is that in the pus in softening glands, there are many living tubercle bacilli which have escaped the destructive process and which, if forced into the circulation, may result in dissemination. I would, therefore, urge the utmost conservatism with regard to all surgical procedures in tuberculous children.

The tuberculous child should be under skilled medical observation from the discovery of his condition until he has safely passed the period of adolescence and to this end the open air school proves to be the most practical means. A child once placed in an open air school should there

continue throughout his school life. In the open air school with its abundance of fresh air and good food we have the facilities for supplying that third essential, which to my mind is the equal of the other two, and that is the opportunity of affording to these children the advantage of prolonged rest. I have had the gratification of seeing wonderful results from keeping a tuberculous child on all day rest for a period of several months, in certain extreme cases, when ignorant parents absolutely refused to allow the child to be sent to a sanitarium.

25 East Washington Street.

MEDICAL COLLEGE TRAINING.*

CHARLES P. EMERSON, M. D.,

Professor of Medicine and Dean, Indiana University School of Medicine.

INDIANAPOLIS, IND.

It is indeed gratifying to us of the medical profession that you have invited the discussion this evening of the importance of giving medical students more thorough training in the diagnosis and treatment of tuberculosis, for we have an obsession, perhaps not fully justified, that the public in general, and especially the educated to whom we should look for support, is not quite loyal enough to us in our attempt to raise the standard of efficiency in our graduates. Whenever we propose new laws governing medical practice, laws designed to protect you, there is a pretty well defined suspicion prevalent among our friends that we have some selfish motive in view. We teachers cannot understand this, for any increase in the requirements demanded of our graduates decreases the number of our students, raises the expenses of maintaining the school and increases the number of hours which we teachers must spend with our students. Our desire for better laws is without qualification altruistic and self-sacrificing.

You have asked me to present the educator's point of view concerning tuberculosis, so I will proceed: It is a safe rule in pedagogics that since ontogenesis runs in general parallel to phylogenesis, we should in the presentation of a subject to the student follow, in so far as possible, the historical development of that subject. Our students make the acquaintance of tubercu-

*Read at Mississippi Valley Tuberculosis Conference at Indianapolis, Sept. 29, 1915.

losis first under the guise of several apparently distinct diseases. Scrofula would at first seem very different from white swelling of the elbow, consumption from spinal disease, tabes mesenterica from Addison's disease, pleurisy with effusion from one form of meningitis, etc. But soon the students see the unity of these conditions, understand that the manifestations of one and the same disease in different organs must be very different since the functions of the disturbed organs are so different. This, the first stage in his education concerning tuberculosis, we will designate as that of organopathology, or the study of this one disease in separate organs, clinically separate diseases and with quite different symptoms.

Very early, however, the student studies *Bacillus tuberculosis*, a parasite which is the sole cause of tuberculosis. Now the disease assumes the form of a biological problem, and he realizes that since he knows better than others how this disease spreads he cannot escape the responsibility of warning his neighbors, as well as his patients, of the dangers of careless habits of expectorating; he cannot but urge the enactment of better housing laws. He studies tuberculosis of cattle and finds that he has a responsibility towards the public in matters of meat and milk inspection. His conscience should make him a voluntary public health officer.

In the junior year of his medical course the student awakens to the realization that tuberculosis is a disease of the whole man, not of individual organs. Contracted often in infancy and latent perhaps for years, the disease finally may (or may not) cause such disturbances by its inroads into almost any organ or organs that the patient cannot but become painfully aware of its presence.

The fourth stage in the student's education is reached when he sees that the so-called symptoms of tuberculosis really are not evidences of the attack by the parasite upon the body but rather are manifestations of the defense of the individual against the disease. He finds that he is in the position of one overhearing another in conversation over the telephone; he hears but one side of the conversation. So our student studies in vain for the manifestations of the disease, that is, of the attack. The pains are evidently warnings, the fever is a protective phenomenon; the

tubercles are masses of tissues thrown up as bulwarks around the parasites; the cavities are attempts at healing; even the patient's death resembles the suicide of the Roman soldier who, when the tide of battle turns against him, thrusts his sword into his own breast; so death would seem due to the same mechanism which previously protected the patient. But the result of this discovery is a radical change in the attitude of the student towards the disease, for he sees clearly that his duty is to strengthen the patient, to aid in his defense. Destroy the germ directly he cannot, but aid the body to destroy it, he can. Unconsciously he becomes interested in organized efforts to procure for the patient long continued periods of rest, better foods and facilities for living in the open air.

The fifth step is taken when the student sees that tuberculosis is not a disease of the isolated individual but of the family, which must be treated as a group if its individual members are to recover, for all in the family share in common dangers, all are somewhat similar in their powers of resistance and, as a rule, each often owes his infection to one or more others near him.

And finally the student sees that this disease is not alone one of the family but of society at large. The patient not only has a home but a place where he works, another where he amuses himself; he has not only a family but fellow laborers who may receive the disease from him. His work itself may add to his dangers by tending to lower his resistance, and our student finds that he cannot but interest himself in sociological problems and philanthropic activities which formerly would have seemed far removed from his medical studies. At last he realizes that as a physician his first duty is to the public at large; second, to his individual patients. One result is that about 50 per cent. of our medical students have been enrolled as active volunteer workers of the Social Service Department of Indiana University.

But such a complete evolution of the student's ideas is possible only if his education is of the best. The better the courses in laboratories and wards, the harder he works with microscope, test tubes and stethoscope, the better chance there is that he will interest himself later in public health movements, in charity organization societies and in congresses such as this. If you wish doctors

who will and can lead in these movements, and you complain that your doctors do not, then give them better laboratories, better hospitals and better teachers; that is, vote for increased appropriations for our medical schools and for laws which will require better premedical and medical training. And don't suspect that it is a selfish motive which prompts us to ask these things. You cannot have a good harvest unless you start out with good plants and take good care of them, and the quality of the ripe fruit bears a very direct relationship to the flower and the green fruit. A doctor may desire to aid in philanthropic movements for the better control of tuberculosis and the better care of consumptives, but the better trained he is in the scientific subjects of medicine the more certain is he to support benevolent movements and the more aid will he be in them.

You often wonder why we do not in our medical schools make more of a specialty of tuberculosis, have separate clinics for it and more doctors who treat this disease alone. We do have special dispensaries and wards for tuberculosis patients, but this is chiefly for the protection of the other patients. One cannot safely make a specialty of tuberculosis except insofar as safety or convenience may dictate. This disease is so prevalent, attacking 90 per cent. of all persons some time during their lives, attacking any and every organ of the body, masquerading under the guise of so many other diseases and so many other diseases under that of tuberculosis, that to understand this disease well is to be efficient in the general range of internal medicine. Tuberculosis is one of the half dozen subjects around which the interest of each man in a dispensary more or less revolves. The tuberculosis problem is coextensive with the whole problem of medicine, surgery and the specialties. You cannot safely train a man well in this subject alone, and for that same reason you should suspect one who claims that peculiar training.

In conclusion I beg the members of this association to interest themselves in the support of better medical schools and in the enactment of more efficient laws governing medical practice. Prevention is the master word in the tuberculosis problem and the surest means of attaining this is the elaborate education and loyal support of picked men for general practitioners; men who, whether appointed for this purpose or not,

will raise the general standard of public health, educate the public in matters of housing, food inspection and cleanliness; men who will make earlier diagnoses of the disease and treat it well. Indeed, I know of no better way in which this association could attain the results for which you so earnestly are striving.

UROCHROMOGEN REACTION IN PULMONARY TUBERCULOSIS.

MAX BIESENTHAL, M. D.,

CHICAGO, ILL.

Attending Physician, Cook County Hospital; Attending Physician, Chicago Municipal Tuberculosis Dispensaries.

Various tests, signs and symptoms have been noted as being of great value in the diagnosis of tuberculosis. The prognosis is usually relegated to a small paragraph and is limited to a few clinical observations. And yet in practice, next to the diagnosis and almost of equal importance to the physician, the family and the patient, is the question of the prognosis. The recent work of M. Weisz,¹ describing a new laboratory test as an aid in the prognosis of pulmonary tuberculosis, therefore, becomes a matter of great interest. This paper, covering my observation in 155 cases, in the service of the Cook County Hospital and the Municipal Tuberculosis Dispensary, is based on the problem as worked out by Weisz.

Weisz, following work done by Ehrlich, had noticed that tubercular patients having a positive diazo reaction, as a rule gave a poor prognosis and but rarely improved or recovered. On the other hand those who had a diazo negative urine usually were improving and ultimately recovered. But he observed that the diazo reaction lacked uniformity in its appearance in the urine. Weisz in the course of his study noted that urochromogen was present in urine. This he believes to be a decomposition product of urochrome, the normal coloring matter of the urine, which has undergone a defective oxidation due to the presence in the body of vast quantities of toxins.

In the United States, the first work in this line was done by Heflebower² at the government's sanitarium at Ft. Bayard, N. M. He concludes, as does Weisz, that "A constant negative urochromogen reaction indicates that a case is progressing favorably while a constant posi-

tive result indicates a progressive downward case."

The urochromogen test is dependent on the reaction of potassium permanganate on the urine. Two test tubes are to be taken. In each is to be poured 1 c.c. of the urine to be tested and 2 c.c. of distilled water. One tube is now used as a control while to the other is added three drops of a 1:1000 solution of potassium permanganate. The test tube is shaken thoroughly. A positive reaction is indicated by the formation of a yellowish color in the treated tube. Various degrees of a reaction are indicated as being urochromogen plus one, two or three, depending upon the intensity of color reaction.

In my work, covering eleven months, there are sixty-seven cases living and eighty-eight are dead. Of those alive, twenty or 30 per cent. by the history, physical findings, temperature, pulse and course, gave a good prognosis. Twenty-six or 38 per cent. gave a fair, while twenty-one or 31 per cent. gave a poor prognosis. According to their urochromogen reaction, in the series of the living cases, forty-one or 61 per cent. had one or more negative tests, six or 9 per cent. had both negative and positive reactions at various examinations while twenty-one cases or 30 per cent. had positive reactions. Of the twenty cases that gave a good clinical prognosis fourteen or 70 per cent. gave a constant negative reaction. Of the twenty-six with a fair prognosis nineteen or 72 per cent. gave a negative reaction. Of the twenty-one that gave a poor prognosis seventeen or 80 per cent. gave a negative test and only four or 20 per cent. gave a positive. Thus we find that cases apparently with good chances to recover will give a greater percentage of positives than will cases apparently hopeless.

In my series of eighty-eight dead only one case or 1 per cent. plus, on first examination gave a good prognosis and at the same time a negative urochromogen. Death was due to a rapidly progressing acute nephritis. Only nine or 10 per cent. of the cases gave a fair clinical prognosis and seventy-eight or 88 per cent. gave a poor prognosis.

Of these seventy-eight cases, sixty-five or 84 per cent. gave a positive reaction. Five of this number only being positive just previous to death, while seven who previously had given a

positive reaction, a day or two before death gave a negative. Of the nine cases clinically fair as to prognosis, seven gave a positive reaction. In this series are five moribund cases with a urine examination within twenty-four hours of death and all gave a negative urochromogen test. One of these five cases was a generalized miliary tuberculosis; a diagnosis corroborated on the post mortem table.

Comparisons of prognosis by both laboratory and clinical methods give us the following. Of the total number living, twenty-one gave a poor prognosis clinically while twenty of these cases gave a positive urochromogen reaction. Of the total number dead seventy-eight, or 88 per cent. gave a poor prognosis on clinical basis, while only sixty-five, or 73 per cent. plus, gave a positive urochromogen. But taking out of consideration the five moribund cases, leaves us a positive percentage of 79 per cent. plus.

Thus we find that we have a fairly constant ratio between our errors in the clinical and the laboratory deductions in our fatal cases, but among the living cases the margin is in favor of the urochromogen test; of these 31 per cent. gave a poor outlook clinically, while only 20 per cent. gave a positive reaction.

Conclusions:

(1) I believe that in view of these results, further investigations are justifiable, which may bring out a work of great value to tuberculosis workers.

(2) That cases although clinically unfavorable, but with repeated negative reactions, frequently improve or apparently recover.

(3) That a positive reaction, especially if repeatedly present, is a grave sign; especially in our ambulant cases.

(4) That in the bedridden or terminal cases, the clinical prognosis is slightly more accurate than the urochromogen test; due probably to some urinary changes as those evidently present in our moribund cases, which result in a negative urochromogen.

(5) That the test is by no means conclusive and at present should only be used as a check on our clinical work not as a specific method in the prognosis of pulmonary tuberculosis.

REFERENCES.

1. M. Weisz: *Munchen Med. Wochen*, 1911, vol. LVIII.
2. Hefebower: *Jour. Am. Med. Sciences*, February, 1912.

THE BEST TUBERCULOSIS PREVENTION FROM A PATIENT'S STANDPOINT.*

MRS. SIBYL MORRIS TEAGUE,
BLOOMINGDALE, IND.

I feel that it has been very unfair to place me on this program with all these public speakers, but I will do the very best I can for you.

I am not here because I know anything about tuberculosis.

Three years ago I came home from the West, and since that time I have tried to forget rather than to remember about it. But when I heard of this conference I was like an old war-horse that smells powder—I began to prance, though I certainly had no idea it would land me here.

Now I am to give you a patient's idea of the prevention of tuberculosis. With every regard for the opinion of you who are so much better informed than I, and with whom I shall no doubt take issue, I can only present the conclusions I have drawn from my own experience, and from the experience of the many, many tubercular patients with whom I have spoken during my sojourn in the West.

Perhaps the shortest cut will be to tell you my own story. When I was a school girl I was ill for several weeks with "walking typhoid fever," followed later in the year by pleurisy. Several years later a severe cold "brought on" tuberculosis. It was recognized and I was hustled off to Colorado. Here I became a patient of that splendid physician and gentleman, the late Edward S. Solly; no doubt many of you have known him. Under his care I greatly improved, but somehow I did *not* gather the idea that I could get well. I do not mean to criticize Dr. Solly; no doubt his advice would have been all sufficient had I ever paid any attention to the subject of tuberculosis. I had not been taught as the public is today and *therein* lies the fault.

There was not an anti-tuberculosis organization in the country at that time. No one but doctors was given any particular thought. I was filled with the idea that I must die—and that shortly. I vividly recall the years when my last thought at night and the first in the morning was, "I am a consumptive." It was not until,

as a last chance, I went to the Agnes Memorial Sanatorium in Denver that I really began to know and understand about tuberculosis, and to realize how altogether different my life and the lives of my fellow-sufferers might have been had we but understood long years ago.

Briefly, as I look back over the years and think of all it has meant to me to have tuberculosis, I wonder what would have prevented it.

It seems to me that had I been taught at home and at school the relation of fresh air and proper nourishment to health; had I been taught in plain words how to avoid tuberculosis by keeping my "resistance" up to normal; had I been made a "fresh air child," I believe tuberculosis need never have claimed me as a victim. But there is something else to be said and you will not like to hear it. Suppose when I had "walking typhoid fever" it had been properly diagnosed and known for incipient tuberculosis (which it really was) and I had been told how to live and how to care for myself, is there not good reason to suppose I would have escaped the desperate fight I have had? Granted that this was several years ago, what of the thousands of cases today that are being diagnosed as malaria, stomach trouble, liver trouble and what not?

I am well aware that doctors do not like to hear this side of the story, but neither do the 500,000 tubercular victims in the Mississippi Valley like to have tuberculosis. There are various reasons why it was not prevented in their cases. I have an opinion or so on the subject about which I am very *sot*.

Last winter the Indiana legislature passed a bill making it the duty of the doctor to report all cases of tuberculosis known to him—to keep up with us and fumigate us, and so on, which is all very well—but I believe it is time to begin to talk and legislate at the other end of the line. I would like some legislating done about the doctors (present company always excepted).

Just here let me assure you that to that splendid body of men, who are doing all they possibly can in this fight for humanity, who are giving of their time and talents, that tuberculosis may be stamped out, in the name of its 500,000 victims in your states and mine, I take off my hat.

I refer, of course, to the far-too-frequently found general practitioner, and the occasional so-called lung specialist, whose failure to cor-

*Read at Mississippi Valley Tuberculosis Conference at Indianapolis, Sept. 29, 1915.

rectly diagnose tuberculosis has long been a weariness to the flesh—and worse. I wish I might tell you the stories that have been told to me by victims of this very incompetence. Since I am one of the victims, I think I have the right to feel very strongly about it.

I believe it is time to ask for a higher standard of efficiency in the detection of tuberculosis. Medical graduates have been “supposed” to be able to detect it long enough—it is time to *require* it. The fight against tuberculosis is recognized as the fight of the ages. Then why not give the medical student training that fits him for the fight? If, as you tell us, the doctor who can detect incipient tuberculosis can detect almost any other disease, is it not a most desirable qualification to possess? For proof that I am somewhere in shouting distance of the right idea, I refer you to the statements made here last night by Dr. Emerson and Dr. Lanza, the latter of whom said, “It is a reproach to us that we do not detect it oftener.” I believe, to detect it in the very incipient form to which Dr. Lanza referred, is *practically* prevention. Then what are we to do about the doctors who, having discovered tuberculosis, do not or will not tell the patient his trouble. Why not name it? When the doctor finds we have typhoid fever or locomotor ataxia he says so, and we set about getting rid of it if possible. Why this mystery and whispering in corners about tuberculosis? It is a disease, it is not a crime.

And why this fanatical fear of tuberculous patients, particularly of sanatorium patients, and even of the very sanatoriums themselves. So long as you deny having tuberculosis and hide it and scout the very idea, you are safe, nobody fears you—but admit it—adopt sanitary measures, or go so far as to go to a sanatorium—ah, there’s the rub. As I have told you, I have been to a sanatorium and I know. I recall visitors who came in wide-eyed curiosity to see the “in-mates”—some only ventured near enough to the porches to ask idiotic questions—and to receive very suitable answers. For instance, one old gentleman before venturing near always put disinfectant on his beard—this operation he repeated when he left our “polluted” quarters. I do not forget my friends or the many other visitors who came for friendship’s sake and for the cheer they brought, but these ideas do prevail, and it is be-

cause of these ideas and because of the dread of becoming an object of curiosity, and something to be shunned, that people are denying their condition, and are thereby scattering the germs broadcast.

Such public sentiment is doubtless responsible for the recent attempted legislation, whereby tubercular patients were to be kept from all public gatherings. The Indiana legislature spent nearly two days wrangling over this very thing last winter.

Now, if it were at all necessary, I would be willing to be corralled, and fumigated, and reported and otherwise entertained; I would be willing to stay away from church and the theater, and if it were thought to be detrimental to the animals, caged and otherwise, I would stay away from the circus, and I think I speak for a vast majority of tuberculous patients when I say this. But there is one provision to this agreement: In the name of humanity can there not be some fair means of finding out all who are tubercular and treating all alike. If, as we are told on high authority, nearly all of us are at some time tubercular, let’s *not* fasten all the punishment, social, industrial and every other kind, onto those whose condition even the most ignorant know.

Isn’t it time for the pot to stop making remarks about the kettle?

Samuel Hopkins Adams declares “it is high time the public be taught the truth about the Great White Plague and that they learn that we do not ‘catch consumption’ as we do a cold or the measles.” That such ideas prevail he lays at the door of “health authorities, anti-tuberculosis organizations and the medical profession in general,” who, he says, “have inspired the public with an unreasonable and cruel horror of any person afflicted with tuberculosis, a horror often expressed in a tragic ostracism.” Mr. Adams quotes Dr. Baldwin of Saranac Lake, N. Y., as saying: “It is time for a reaction against the extreme ideas of infection now prevailing.”

It seems to me this is a blow at the very root of the trouble and the sooner the public *unlearn* a lot of ideas propagated by alarmists and extremists, the better for all concerned. Why, it was only the minute before last in the whirl of the ages since Professor Koch discovered the tubercular germ. Phthisis was rampant in Bible times—the germs began to be some time, maybe

"when I was a tadpole and you were a fish in the Paleozoic age." Surely if it had been the infectious thing some theorists have held, you and I would not be here today, for our ancestors and Robert Koch's ancestors, and their ancestors, would all have been laid low long ago by tuberculosis. Happily, the better class of physicians is advocating that there is very little danger in even close contact with open tuberculosis, and according to some authorities none at all in ordinary association.

And so, from a patient's standpoint, I would say, teach the public in *every available way* to preserve health—and that is of first importance. Teach them that only the trained and practiced ear can detect incipient tuberculosis, and then ask the medical schools to furnish the ears, properly equipped. Teach the public, and that means teach the children, how to face the situation in a sane and practical manner.

It is *time* that the way be made easier, so that people are not afraid to consult a physician, and not afraid of ostracism if the verdict be incipient tuberculosis.

What a calm after the storm it will seem when sensible ideas prevail, and when to be in the presence of tuberculosis victims, indeed to visit a sanatorium, will not be thought to be as tragic as the "Charge of the Light Brigade."

TUBERCULOSIS PREVENTION FROM A PHYSICIAN'S STANDPOINT.*

J. G. LAMONT, M. D.,

Superintendent North Dakota State Tuberculosis Sanatorium.
DUNSEITH, N. DAK.

It may be of passing interest to the members of this conference, most of whom live within the tropics, that is, within the tropics of the tempering breezes of Lake Michigan, to know that I come from a border state, close to Canada, and that we have a state sanatorium that is located within fifteen miles of the national boundary. It may also be of interest to know that we have cold weather up there, and that last winter our coldest day was 42 degrees below zero, and that we are still conducting a sanatorium, and in that sanatorium people sleep out of doors, and those people who sleep out doors are tuberculosis pa-

tients; some advanced, some moderately advanced and some incipient.

I simply mention this in passing, for the reason that it brings home to us the fact that fresh air is after all the great cure and the great preventive.

Racial immunity, as found in yellow fever among tropical dwellers, is now being purchased in tuberculosis at a tremendous sacrifice in human life. The weaker individual succumbs, that is, the individual low in resisting power. There can be little doubt that the race is gradually evolving, throughout the centuries, an average human type, upon which the tuberculosis germ, no matter how malignant, will remain innocuous.

It would seem that nature tends to preserve high averages at the expense of the weaker, as well as the stronger types. The robust are destroyed by war or diseases peculiar to the type; the weaker fall victims to tubercle and other chronic diseases. Thus we find that less than two per cent. of the people in the United States have *active* tuberculosis, while approximately ninety per cent. have the latent or non-clinical type. By the latter is meant that large class of persons who show sensitiveness to tuberculin, and yet in whom the disease tuberculosis is entirely in abeyance. Such individuals, although they are without doubt repeatedly reinfected, remain able to resist.

The health of the average person, therefore, insofar as tuberculosis is concerned, must depend upon an over-correction or over-balance of resisting power against bacilliary infection, whether old or new. "To him that hath shall be given." Each effort of the resistant to overcome fresh infection results only in new strength. In this way may be developed in each individual both a relative immunity to the tubercle bacillus, and at the same time sensitization to its products.

Ignorance, superstition and vice have always obstructed nature's plan of betterment. The Chinese coolie, whose sleeping room is 4 feet by 8. the American Indian, who relinquished the airy tepee for an ill-lighted, and filthy shack, the negro, who crowds the city slum tenement, the American who refuses to apply to his methods of living the elementary rules of proper hygiene alike suffer personally, and serve to obstruct to a greater or less extent the working out of nature's plan. The two per cent. of active cases is constantly being recruited from the im-

*Read at Mississippi Valley Tuberculosis Conference at Indianapolis, Sept. 29, 1915.

mensely larger class which nature has already strenuously attempted to preserve. In infancy, where primary infection has not yet occurred; in childhood, where nature's protective inoculation is yet insufficient; in adolescence, where the vital forces are actively occupied in constructive effort; during lactation, and in the temporary health-bankruptcy or convalescence from acute concurrent disease, is the invasion most likely to occur. Tuberculosis during infancy has long been known to be almost always fatal. The slum baby as well as the healthful prairie farm infant, may become infected with equal facility through the use of milk from tuberculous cattle. A few years ago, while acting as health officer in a prairie city, I found fourteen per cent. of tuberculosis in dairy herds. The milk was being sold, used promiscuously with the result that glandular, bone and joint, as well as meningeal, tuberculosis in children were fairly common.

By misdirection of effort much of the anti-tuberculosis work of the present time is wasted. The farmer cultivates his more weedy fields for the purpose of eradication. The *Tubercle Bacillus*, the most noxious vegetable organism of the age, finds only in certain classes of humanity the suitable growing soils. By directing our efforts to these classes we shall accomplish where we otherwise fail. If, as many authorities state, more than 60 per cent. of children become infected before school age is more than half completed, it seems that this field needs especial cultivation; if resistance is lowered very materially during concurrent diseases, this class of patients should receive especial attention in our prophylactic efforts. It is obvious to even the superficial observer that nature's methods of repair are most successful when not obstructed by improper living. Post mortem work reveals scars, healed cavities, encapsulated colonies of inert bacilli—battlefields reclaimed by wonderful reconstructive effort. Is it in the least degree improbable that a very large proportion of the 90 per cent. of infected individuals have been relatively immunized for a shorter or longer period at the time of sensitization? Is it not probable also that only after multiple reinfection and in the presence of such conditions of lowered resistance, produced by habitual error in living, is this relative immunization overcome, allowing complete invasion of portions of tissue poorly supplied

with nourishment or oxygen—as, for example, vertebral bodies and lung apices? Our work should understudy nature's method and should endeavor to protect chiefly those classes where nature fails to do so. If tuberculosis in the first year of life is almost uniformly fatal, why not direct a larger effort in the tuberculosis campaign to the education of mothers, as to cleanliness and sterilization of food and to the disinfection of toys and other articles that the child carries to its mouth; also to moist cleaning of rooms to avoid dust? If school children are more especially susceptible to the disease from lack of nature's protective inoculation, should we not place the hygiene of school life under more complete medical supervision? If certain individuals are born with a susceptibility of infection and a lack of balance of resisting power, should not these be placed under careful institution treatment at all times until a standard of health and development could be reached? Selection from some strain of acid fast bacilli, of a vaccine of sufficient attenuation to be used as a protection in such cases, would be a preventive measure of real value. The efforts of publicity campaigns should be directed to those classes of persons most likely to succumb to reinfection.

Early Diagnosis. This question has been much discussed, and the responsibility of the physician has been variously estimated as to percentage of failure to recognize early symptoms. It is true that a majority of patients who apply for treatment at dispensaries and sanatoria have arrived at the moderately advanced stage. Incipient cases frequently fall below 15 per cent. of applicants to sanatoria. We believe, however, that the average physician who exercises ordinary care and average skill seldom fails to recognize the incipient form. The diagnostic failure is nearly always due to hurry, a hesitancy to call for re-examination, or a reluctance to attach the tuberculosis stigma to patient or family. The disease frequently is engrafted upon other illnesses so that the symptoms merge. Many patients are slow to seek or follow advice, or for monetary or other reasons cling to daily duty. From lack of proper school inspection many children have the glandular form for months and are allowed to continue school duties. To secure early diagnosis, systematic inspection of all homes, schools, public buildings and careful medical examina-

tion at regular intervals of all school children, factory workers, store clerks, etc., is necessary.

The All-Time Health Officer. This official should be appointed at an adequate salary to give all of his best efforts to the public health work of each health district, whether this be city, precinct or country township. He should have had special training in public health work, and be allowed such nursing assistance as necessary. He should be invested with authority to control disease by enforcement of quarantine; should supervise meat and milk supply, should inspect schools, calling attention of parents to diseases of eye, tonsils, pharynx, lungs, glands, etc.; should select such cases for open air treatment in schools, camps and sanatoria as suggest tubercular non-resistance.

By systematic use of tuberculin in early diagnosis, a more accurate estimate could be made as to the exact time of the infection, and the source traced and removed.

The all-time health officer, equally effective whether in city or country, should be appointed without favor. His intellectual bias should be executive, as well as scientific, and his moral standing in a community should be that of priest of cleanliness and minister of good health. Not until municipal health inspection is valued as the greatest public economy shall it be reasonable to hope for a complete extinction of tuberculosis in children or a great lessening of the death rate due to digestive diseases.

The Actively Tubercular Patient. Segregation of advanced cases should be compulsory whether at home or in an institution. The far advanced patient in the later weeks of his final illness generally loses his sense of cleanliness as to sputum, hygiene, and his sense of duty to family and community. The average bed-fast case requires constant nursing supervision. Segregation in institutions is most economical and efficient. Moderately advanced cases, if the disease is quiescent, may be allowed parole to their homes after a certain period of habit forming education at a sanatorium. Such patients, however, should be under medical supervision at all times.

It is therefore to be concluded as follows:

1. That tuberculosis preventive effort should be concentrated more especially upon such classes of people as are found to be of low-resisting power, e. g., infants and school children.

2. That such work can best be performed under the careful supervision of an especially trained medical executive, who will devote all of his time to this work.

3. That more rigid restriction should be placed upon the germ carrier, more especially those of the advanced type, and that where possible these should be placed in suitable institutions.

THE EARLY DIAGNOSIS OF TUBERCULOSIS.*

A. J. LANZA, PAST ASSISTANT SURGEON
United States Public Health Service.

It may sound somewhat paradoxical to apply the term prevention in connection with a condition already established, nevertheless in the broad field of tuberculosis prevention, in which we are all interested, no factor is of more importance than early diagnosis. Even with our constant endeavor towards improving those industrial and sociological conditions that are responsible for tuberculosis there is a long stretch of future in front of us before we will be able to limit or control their harmful results. The sum of our endeavors in this direction may be likened to a weapon of war whose parts are not yet fully perfected and with whose mechanism we are not yet entirely familiar; but in the early diagnosis of consumption we have at hand a weapon efficacious and at the command of any one of us that cares to use it.

It is no reproach to us that we cannot, so far, prevent tuberculosis, for the numerous antituberculosis and kindred societies represent earnest, widespread and continued endeavor. But it is a reproach to us that we do not recognize tuberculosis more frequently when we see it. The trouble, worry, suffering, poverty, infection of others—the end results of any given case of consumption occur after the early stage is passed. The prevention of these, the lessening of economic waste, the restoration of the consumptive to health, depend on early diagnosis. Broadly speaking, early or moderately advanced consumptives get well, advanced ones die. Between these two extremes, correct diagnosis is the only barrier. Correct diagnosis is not a matter of theories but largely a matter of facts and the

*Read at Mississippi Valley Tuberculosis Conference, Sept. 29, 1915, at Indianapolis, Ind.

application of these facts should be within the reach of every individual in the community. We therefore have two sins against tuberculosis prevention, the sin of commission, when the early consumptive, having come before us, we fail to apply the proper methods to demonstrate his disease; and the sin of omission on the part of the community or state which fails to provide the individual with the opportunity for correct diagnosis. I refer to school inspection and the inspection of workers and work places. We are not always able to avoid sins of omission but we cannot escape the responsibility for sins of commission.

The early diagnosis of tuberculosis has a broader scope and a more general application than the diagnosis of early or incipient tuberculosis. Early diagnosis may be taken to include the diagnosis of tuberculosis as it first comes to the general practitioner, whether it be incipient or moderately advanced. Far advanced tuberculosis does not often appear for medical treatment as a first offender. When we inform a patient, previously ignorant of the fact, that he is an advanced consumptive, our verdict nearly always implies that he has applied for treatment at an earlier stage without his disease being recognized. So it may be stated that the early diagnosis of tuberculosis consists in the application of certain principles and methods that will enable us to recognize the disease when the patient first applies for symptomatic treatment.

When a patient presents the classical symptoms of cough, fever, night sweats, loss of weight and hemorrhage, the diagnosis proclaims itself. But we are dealing rather with that group of patients who present the various constitutional symptoms to which we apply the term "run down." They are easily tired, or tired all the time, they have loss of color, loss of weight, general incapacity, insomnia, loss of appetite or other complaints directed at the digestive system; headaches or aches and pains referred to one or both shoulders. Sometimes a cough is present or just a clearing of the throat without distinct cough. Or the patient may become irritable, quarrelsome, hard to get along with in the office or at home. Any one or more of these symptoms is suspicious and should put us on our guard. If we will bear in mind that one-third of the deaths

in adults over 18, both men and women, are due to tuberculosis, we cannot but consider tuberculosis as a possibility in any patient with constitutional symptoms. No such patient should be allowed to get away without a thorough examination.

A history of pleurisy, aside from acute pneumonia, or a history of hemorrhage, especially in a young adult, practically always means active or clinical tuberculosis at that time. A history of fistula, ischiorectal abscess, otitis media or cervical adenitis is always suspicious. A history of ethmoidal sinusitis is not often obtained but is suspicious when it is. When any of these occur in the history we are justified in concluding that it is probable that the patient had active tuberculosis at the time specified, especially if we can elicit that there were night sweats or cough also. Consequently we must conclude that it is possible that the patient now is suffering from a renewal of activity of an old tuberculous infection even though the usual or classical symptoms are not present.

When a patient has had pneumonia, grippe, typhoid fever, "bilious fever," "remittent fever," "lung fever," "swamp fever" or any other kind of fever, including typhoid pneumonia, or just plain fever within the past two or three years, it is not always practicable to ascertain just what was the nature of his illness, but ask him if he has ever been as well since he had his fever as he was before. If he says no, he has never been as good a man since as he used to be, we have one point and a strong one ready made for our diagnosis.

The mere fact that there was tuberculosis in the parents, grandparents or other relatives is not so important as the history of continued or intimate exposure to an active case of the disease. The occupation of the patient and the length of time he or she has followed it is worthy of attention, for a consideration of the nature of the patient's work will often illuminate symptoms; besides which, occupations of certain kinds tend to change the contour of the chest and must be reckoned with in the physical examination.

Physical examination should be insisted on not only for those who have cough, fever, night sweats or hemorrhage, but those who present the indefinite constitutional symptoms above referred

to. For a proper physical examination it is essential that the patient be stripped to the waist and examined in a good light. A high stool is a great convenience, because it relieves the patient of the strain of standing, brings his chest on a level with the examiner so that the latter does not have to stoop constantly, and leaves all sides of his body readily accessible. With the patient thus situated we are prepared to inspect, percuss and auscultate our patient with complete satisfaction. Without going into the matter in detail one proceeding is of utmost importance, namely, auscultatory cough. Listening to the cough at the end of expiration and followed by an inspiration is the most valuable part of a physical examination. The gentle cough at the end of expiration stirs up the residual air in the alveoli and in early tuberculosis the following inspiration gives us a distinct moist rale we can get in no other way. Sometimes we will hear a fine rale right on the heels of the cough, what Dr. Knopf calls "post tussic suction." These rales are practically pathognomic of tuberculosis, and we will not hear them unless we make the patient cough, and we often hear them in what would otherwise appear to be a normal lung.

Now, if we have examined our patient and find his lungs apparently clear, are we justified in telling him he is free from consumption? We certainly are not so justified, provided any of the constitutional symptoms we have mentioned before are present. These demand treatment and diagnosis and it is not sufficient to dismiss them as non-tuberculous in origin because we cannot ratify them on physical examination. There becomes necessary then a period of careful observation. During such observation two things are essential, a weekly record of weight, noting stability, pains or losses, and second, a daily temperature record taken preferably at 10 in the morning, and at two and four in the afternoon. This should be done for not less than ten days or two weeks, and longer if circumstances warrant. It is usually possible to instruct a patient how to take his temperature accurately and he can then be given a blank form to fill in. If there is cough or clearing of the throat with expectoration, numerous examinations of the sputum should be made. If these continue negative, and there is still doubt or suspicions in

our minds, we should, if possible, have some of the sputum injected into a guinea pig.

Tuberculin tests are valuable only when their limitations are clearly understood. As nearly all adults will give a positive Von Pirquet test, we can realize how narrow these limitations are. None of the tuberculin tests will tell us whether the reaction is due to an active or clinical tuberculosis, or to a latent or healed lesion not demanding treatment. In children the Von Pirquet and Morro tests are valuable aids when all the other circumstances surrounding the case are clearly understood. In any event a tuberculin test should never be made an excuse for neglecting the routine procedure that we have referred to under history, examination and observation. The complement fixation test offers us some hope of being able to thereby distinguish between clinical and non-clinical tuberculosis, but it is not yet generally available nor have its limitations been accurately defined.

If our observation of the patient shows no improvement of the symptoms, or if we note a continued loss of weight, though slight, or a rise of temperature in the afternoons; or, if the pulse is persistently rapid, we are justified in calling that patient tuberculous, or probably tuberculous, as circumstances may warrant, even though we have found his lungs apparently clear and his sputum, if any, free from bacilli. We have probably been prone to lay too much stress on physical examination and not enough on symptoms. As Lawrason Brown has stated, "Symptoms are a better and more accurate guide to activity than physical signs. Symptoms without physical signs demand treatment, while physical signs without symptoms require only careful watching." If we will just consider the proposition for a moment we will see the necessity for applying this rule. On the inside of our program there is a statement that there are 500,000 consumptives in the Mississippi Valley. How many of these are receiving treatment for cough, bronchitis, indigestion, asthma, nervousness or kindred complaints? And because often they were not thoroughly examined when they first applied for treatment, or because their symptoms were not properly gauged and observed. In the early cases it is probable that this latter is of the greater importance.

THE BACTERIOLOGY OF THE SO-CALLED INTESTINAL INFLUENZA.*

A. J. HINKELMANN,
Director Galesburg Laboratory,
GALESBURG, ILL.

It appears that there has been present in many parts of the country during the past winter, a peculiar form of epidemic gastro-enteritis that, according to reports I have been able to gather, has been widely conceded to be an intestinal form of influenza.

Ever since, however, the widespread epidemic of 1889-90, when influenza first became universally known under this name, there has been

In this particular instance, through my laboratory investigation of the epidemic here, I am in a position to state that in those cases that came under my observation, whether or not the influenza bacillus had anything to do with provoking the disease, through possibly being located elsewhere in the body, there was also present another organism, in a local infection of the intestinal tract, and that this organism alone, according to animal experimentation, can produce all of the characteristic symptoms that were commonly present in the cases.

Clinical Course.—The precipitation of the epidemic was most abrupt and could easily be likened to the sudden springing up of epidemic influenza.

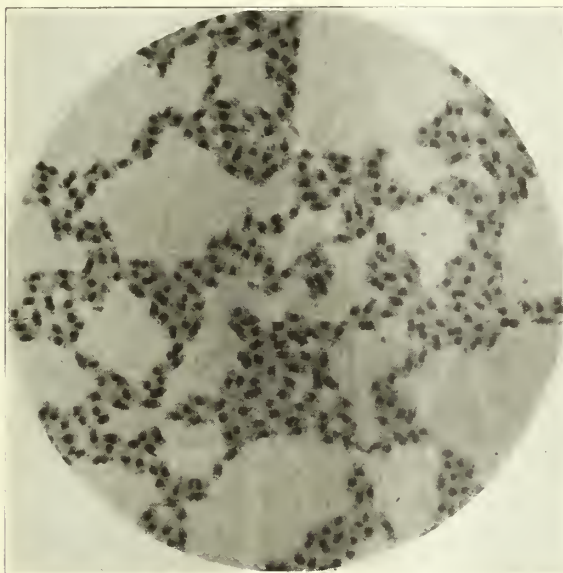


Fig. 1. Bacillus of Winter Cholera, Showing Peculiarity of Staining of the Organism, in First Culture, Following a Long Period of Saprophytic Existence.

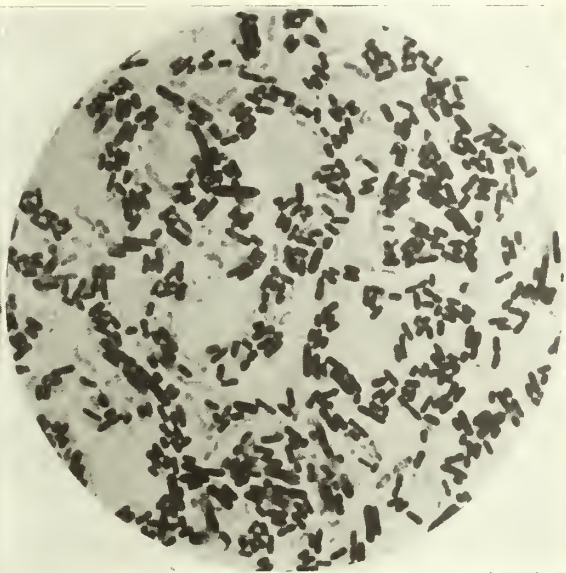


Fig. 2. Bacillus of Winter Cholera, Showing Uniform Staining of Entire Organism.

a great tendency, both among the men of the profession and among the people in general, to apply the name influenza to every otherwise unexplainable condition coming during the time of the year when influenza is usually prevalent.

Literature presents us with technical names for the disease corresponding to practically every important organ or viscera of the body. Through the absence of bacteriological proofs, however, there has always been a great question as to whether influenza after all has anything to do with some of these conditions.

such as the country has experienced from time to time. Practically without any sporadic cases, there was a sudden outbreak in which a hundred or more cases came under the observation of physicians within a period of twenty-four hours. It has been conservatively estimated that during the three weeks the epidemic lasted, about ten thousand people of this city alone fell victims to the disease,

The onset of individual cases was practically without symptoms of a prodromal nature. While some patients experienced a previous feeling of malaise for a period of several hours, in most instances there was a sudden feeling of extreme

*Read before the Fulton County Medical Society, July 5, 1915.

depression in the region of the stomach and a growing weakness all over the body. Along with this there was a clammy condition of the skin and the breaking out of cold perspiration.

After a few moments, in which these symptoms reached their highest intensity, the feeling of depression in the region of the stomach gave way to a feeling of nausea and was followed by a most explosive form of vomiting; vomiting entirely unlike any other form of vomiting, but as though the stomach was thrown into the most intense convulsions. Simultaneously, there was the same convulsive actions of the bowels. In many cases the patient was unable to reach the bath-room before completely soiling himself.

that these acute symptoms were usually entirely without abdominal pains. Also, in most instances, after the first gastro-intestinal storm was over, the patient felt perfectly well. No impairment of appetite; the patient starting out to eat well, and anything he desired, without any ill effects.

A very small per cent, however, seemed to run into a sort of a chronic state and ended in a typhoid-like condition with a period of fever and other symptoms simulating typhoid. Though very threatening in the beginning, owing to the abrupt ending of the disease, it was not fatal. Only one death was reported as a direct result of the infection.

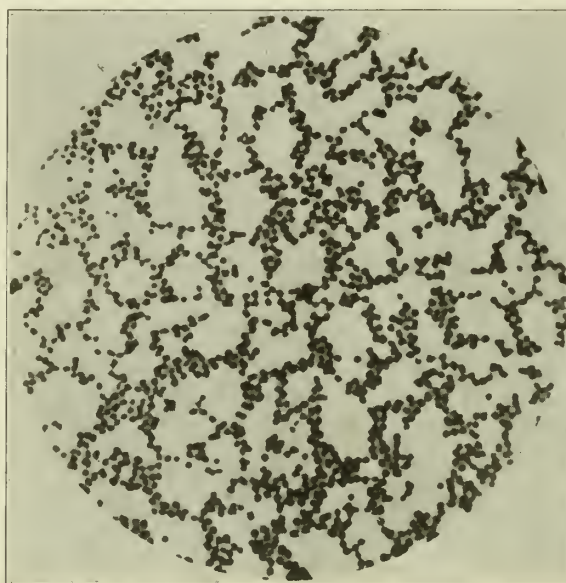


Fig. 3. Bacillus of Winter Cholera, in Culture Following Animal Inoculation.

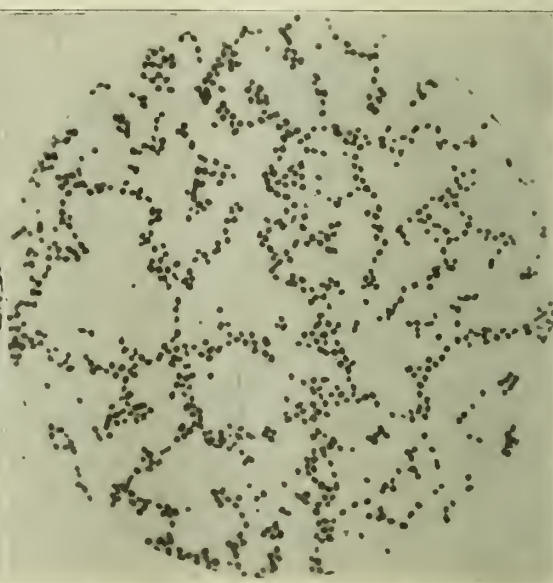


Fig. 4. Bacillus of Winter Cholera, in Culture from Cholera Stool.

Just what the temperature and pulse was at this crisis of the cases, I am unable to say; for the disease was so abrupt in its nature that the physicians had little chance to reach any of the cases in this early phase. However, the patients described all symptoms of collapse; some expressing it, they never had been so sick in their lives before as they were for a little while.

From twenty-four to thirty-six hours was usually the period of these intense cholera-like symptoms. During that time there were attacks at varying intervals of vomiting and purging, purging and vomiting. In some cases there was no purging and also in some there was purging without vomiting. One of the striking features was

Cause.—The finding of a cholera vibrio that morphologically resembled the true cholera organism was reported by one laboratory. This organism, however, was present in very small numbers and when isolated and put to the test of producing similar symptoms in any of the laboratory animals, it proved entirely harmless.

Other reports came of the finding of the well known Shiga's bacillus; this was, however, not borne out by the clinical manifestation of the disease. In no way did it resemble the summer diarrhea or any of the dysenteric-like conditions caused by the bacillus of Shiga or any of the Flexner-Strong group. Instead of assuming the aspect of anything that could be taken for a

dysentery, running over a more or less prolonged course and resulting in the grave intestinal lesions, such as are often produced by the ameba itself, or in like manner by the bacillus of dysentery, the aspect was distinctly cholera in character, or that of an acute poisoning; coming and doing its worst and passing off again within a very short time.

Bacillus of Winter Cholera.—Through the keeping of a number of the stools of patients affected during the epidemic and through repeated bacteriological examination of the city water and sewerage, I am sure that I have succeeded in isolating the specific organism of this disease, which organism, I am also sure, adds to

existence. Especially notable about it is the striking change of features it in some respects presents in passing from one to the other and at the same time leaving the question of its identity clear.

As a saprophyte, when grown on solid media, it produces a heavy red pigment. It is practically aerobic; there is only a slight growth in the absence of oxygen, and these cultures produce involution forms of many odd characters. It does not ferment glucose; acidulates milk after three or four days, but does not coagulate. It liquifies gelatin, is non-motile, and is decolorized by Gram's method.

Following animal inoculation, it loses its pig-



Fig. 5. *Bacillus of Winter Cholera*, Showing Effect of Plasmolysis Upon the Organism of Fig. No. 2.

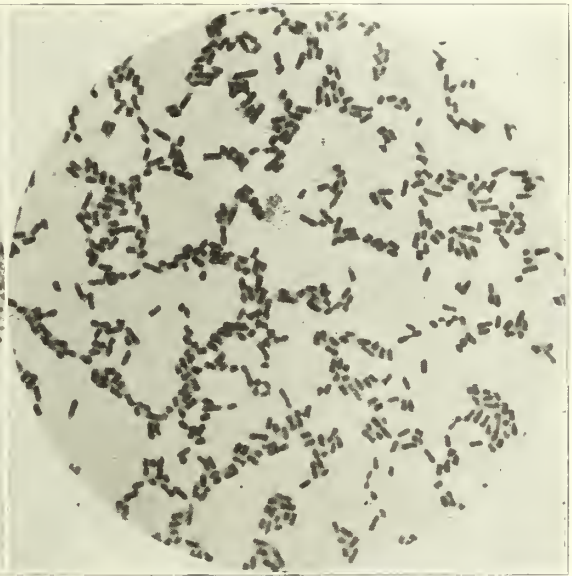


Fig. 6. *Bacillus of Winter Cholera*, Showing Effect of Anaerobic Culture of the Organism of Fig. 4.

the list of our present known pathogenic bacteria an organism capable of producing cholera symptoms and yet does not belong to the vibrio or the spirillum group.

Morphology and Physiology.—It is an organism that is among the very largest of all bacteria, measuring from 2 to 2½ microns in width and from 5 to 8 microns in length. It grows singular and in pairs and has a great tendency toward plasmolysis, refusing to take the stain throughout the entire organism under various conditions, but stains irregularly in different manners.

It is not strictly parasitic, but one of those parasitic organisms able to lead also a saprophytic

ment producing property and takes on a peculiar feature in regard to staining. It now stains more like a large diplococcus than a bacillus, which appears to be due to plasmolysis of the organism. Close study of smear preparations reveals that the deeply staining bodies seen are enclosed within an outer membrane, corresponding to the original morphology of the organism.

After having become parasitic, it acidulates milk more markedly, but again does not coagulate. It also grows somewhat better in the absence of oxygen and ferments glucose. Gelatin is liquified as before. It does not produce indol, neither as a saprophyte nor after having been passed through an animal.

In both cases the colonies are alike, excepting on one hand they show the beautiful red pigment while on the other they do not. The colonies on plates where allowed to grow singly are very large, elevated and moist. The ordinary incubator temperature of 37° C. is not the most favorable one for cultures to grow in. They grow well at this temperature for the first six or eight hours, but after this they become more luxuriant when transferred to room temperature.

Pathogenicity and Animal Experimentation.—I found the organism present in all the stools that came under my observation from the patients of the cholera-like epidemic, and in some cases in very large numbers. In two cases I ob-

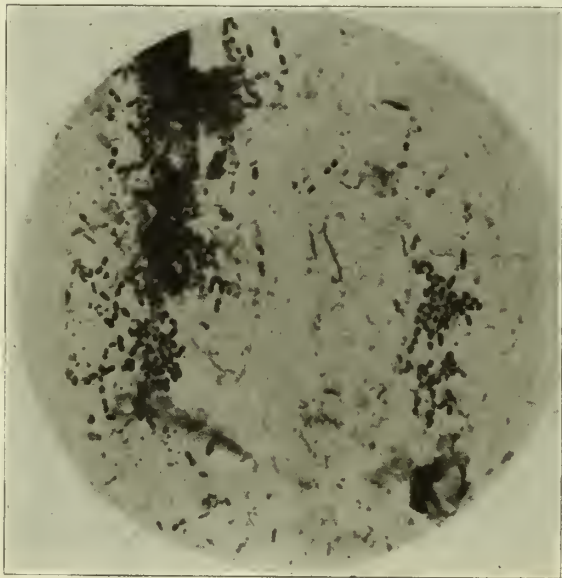


Fig. 7. Bacillus of Winter Cholera in Smear from Cholera Stool.

tained almost pure cultures, and these could be obtained from nearly all after they had been allowed to become old. A small particle on a loop spread over the surface of an agar slant, produced practically no other growth than the characteristic one of the cholera organism.

Animal experimentation brings out quite an interesting feature in regard to the pigment producer and the organism after having produced the disease. In the first case, it produces the characteristic symptoms only after an incubation period of about ten days, while in the later it produces them directly within twenty-four hours. It appears that the pigment producer

is of very low virulence and has first to gain some foothold in the body and here attain a higher degree of virulence before it can actually produce the disease. That this is also the case is shown by some of the experiments I have conducted.

Guinea Pigs Nos. 1, 2, 3, 4 and 5.—All were inoculated into the peritoneal cavity, with about two cc. of a normal salt suspension, each containing a platinum loop full of the pigment producing organism from an eighteen-hour culture. This was followed in all the animals by a six-hour period of depression, such as might follow, however, the injection of many other organisms. Within two days, however, all showed signs of intestinal disturbances, manifested by the peculiar red or whitish red color of the feces. This continued for two or three days, when it seemed as though nothing further was going to happen; but ten days later all were abruptly taken down with typical cholera symptoms and died within twelve hours after onset.

An apparently well animal would suddenly be seen crouching in a corner of his cage and it was plain that he was sick. Temperature taken now showed somewhat subnormal; between 97 and 98. An hour later diarrhea would begin and from this on the temperature would go lower and lower until at the end of six or eight hours it was found down to 92, 93 or 94. This varied somewhat among the five affected. Simultaneously with the fall of temperature, the diarrhea symptoms became more and more intense. Coma and convulsions followed in each case at this point of depression and death occurred from two to four hours afterward.

Smears made from the diarrheic stools showed the cholera bacillus present in large numbers. Mucous particles contained in places practically nothing else but large groups of the organisms. Plate cultures and subsequent pure cultures were made from all of these animals and kept for further inoculation.

Guinea Pigs Nos. 6 and 7 were inoculated into the peritoneal cavity, as before, with one cc. of a normal salt suspension containing a loop full of the subsequent cultures. These animals immediately became sick. About five hours following, they showed the characteristic signs of depression with fall of temperature. This took a rapid course from now on and soon reached the point

of 92 and 93. The animals died within twelve hours after the first signs of the disease appeared, and with all the characteristic symptoms of coma and convulsions present.

Guinea Pigs Nos. 8 and 9.—These were inoculated intraperitoneally with a very small amount of the organisms cultivated from the stools of one of the cholera patients of the epidemic. A colony was simply touched with the end of the platinum loop and rinsed in the usual amount of the salt solution, and this proved enough in both cases to produce all of the symptoms as before, with the fatal end at the usual time. Subsequent cultures were made from these animals as before and tried in others.

Guinea Pig No. 10.—This animal received the touch of a colony in about one-tenth of a cc. of normal salt directly into the circulation through the heart. Characteristic symptoms developed within three hours, and in this particular case coma set in very early and lasted for more than five hours before death. Temperature all this while remaining at about 92.

Rabbit No. 1.—This animal received the usual small dose of the virulent organism into the ear vein. The animal apparently was little disturbed during the first hour, but after this went rapidly into a state of depression and died in an attack of convulsions three hours following inoculation. It appears that rabbits are unable to hold out nearly as long as the guinea pigs do in the extreme state of depression produced.

Pathology Produced.—Autopsy of all the animals showed the same general conditions present, and the one feature evidently back of all other consequent pathology may be stated as follows: Whatever there may be about the cholera organism that produces it, there is either a marked rise in the osmotic property of the fluid contents of the blood or there is a marked lowering of the tissue resistance to the normal osmotic pressure.

As a consequence of this condition, the body cavities contain a large amount of fluid exudate and there is a corresponding depletion of the quantity of blood in the circulation. The appearance of the heart is very characteristic and such as I never have seen in any other post mortem condition. The muscular portion is contracted to a mere point, the auricles standing

out very prominently beyond the ventricles. Blood cannot be obtained from the heart by the usual capillary pipette method; there never is more than a very small amount left and this usually has completely clotted.

The specific organism was recovered from the blood of all the animals that had been inoculated with the high virulent organism, while in those inoculated with the pigment producer and had passed through an incubation period, the blood cultures were negative.

Conclusion.—Through the foregoing experiments I believe I have covered the points necessary to justify the conclusion of a definite organism for a definite disease. I have isolated the organism from both an outside source and from the stools of patients affected and produced similar conditions in animals. From these animals I have made subsequent cultures of the same organism and produced the disease with it again in other animals.

Vaccines.—The action of killed organisms is practically the same as that of the live. A dose of 100,000,000 injected subcutaneously in the arm of an individual who has not already had the cholera-like disease, within a few hours, produced a general relaxation of the circulatory system and a fall of the temperature to 97.6 or lower. Gastro-intestinal symptoms followed within twenty-four hours, consisting of three or four very copious movements of the bowels, together with nausea and a feeling of weight in the region of the stomach. Blood count showed a leucocytosis of ten or eleven thousand, with the increase of the polymorphonuclear leucocytes. Along with this there was an increase of from 500,000 to 1,000,000 of the red cells. Unlike the case of most vaccines, there was absolutely no local reaction at the site of injection.

Source of Infection.—The large number of individuals that became affected in so short a time naturally pointed at once to the water with which the city is supplied, although in many places where the disease broke out the water had not been used for drinking purposes. This however, does not rule out the possibility of infection through it; for being used in every house for some purpose, indirect infection would be equally as easy. I found the organism present in the water in numbers ranging from one to two to every 200 cc.

It is an organism of the sewerage; for here it was present in large numbers, and it is evident that from the sewerage it found its way into the city water. The sewerage of the city is carried off by a large, open ditch that in one place runs within 300 feet of one of the city supply wells. During the months of the winter, analysis of the water, that in turn came from the storage reservoir, showed an alarming increase of the number of colon bacilli present. The fact that the increase was during the winter, when growth in the reservoir naturally is the least, is of evidence that there must have been some direct sewerage communication.

I am much indebted to Drs. Wm. O'R. Bradley and Clyde A. Finley of this place for their assistance to me in direct connection with the laboratory, and especially for their work in observing the clinical side of the disease. I am equally indebted to a number of other physicians who have likewise shown an active interest in the infection and were kind enough to furnish me with material for examination from the patients, as well as with the clinical data they had gathered.

The fall of temperature produced by the organism in my experimental work was the most pronounced, and the coma the most typical I have ever seen produced in laboratory animals. In the light of these most striking symptoms of a cholera nature, it establishes the fact that whatever the cause may be, or however the organism does it, this property is not confined alone to the vibrio or the spirillum group, but that we have among the cholera producing organisms also a bacillus.

ROENTGENOLOGY OF THE SKULL.*

MAXIMILIAN JOHN HUBENY, M. D.,
CHICAGO, ILL.

Roentgenology of the skull is a field of distinct diagnostic value, and at the present time is not used as frequently as it merits.

In looking through the literature, one will find very little on the subject as pertains to the findings portrayed by the x-ray in affections of the head. However, through the patient co-operation of the internists, surgeons and especially the rhinologists and otologists who scrutinized the various shadows very closely, it was found that

they could depend upon a proper interpretation in ascertaining a correct diagnosis. This has stimulated a scientific examination of the head with recognition of many inexplicable diseases.

It is not to be understood that roentgenography is at all times the only deciding diagnostic method, but the idea to be conveyed is that it should be a concomitant method of procedure. It is always desirable to get the physical, chemical and pathological findings, also the history, so that a careful examination for focalization can be made. This is especially desirable in affections that concern the internists and neurologists, a field that up to the present time is quite undeveloped and offers great possibilities.

Before the advent of the Roentgen ray, dependence was placed on inspection, auscultation and percussion and with little satisfaction.

By inspection we can determine the size and shape of the cranium and face, note if any bulging or prominences, but cannot say if the latter were due to thickening of the table or a vaulting with a possible thinning of same. If a pulsating tumor is present, is it due to extracranial trouble or intracranial disease. If effused and discolored with traumatic history, is it a soft tissue involvement or a fracture? If tumor with green color, is it a chloroma? If scalp has a blue tint on account of dilated veins, due to circulatory disturbances, is it a tumor of the soft tissues of the head or does an increase in the intracranial pressure exist?

Palpation occasionally reveals alteration in structure, any unevenness as elevations or depressions; but is it an exostosis or an extensive and deep reaching osteoma; or is it a developmental defect, or normal depression or elevation? Should we find pulsation or fluctuation, then what? Fluctuation is found in developmental defects such as cranial hernias (encephalocele), superficial ulceration (gumma and abscess), hematoma of the scalp after fractures and sinus pericranii (varix of diploic veins communicating with veins from the dura mater). We sometimes get pulsation over the mastoid region, due to enlarged emissary veins on account of small size of the jugular foramen. Sometimes a scar formation of the dura will give no pulsation, thereby hiding a possible defect in the skull. Compressibility of the skull is found in severe forms of rickets, pressure atrophy (hydrocephalus).

*Read before Wilmette Physicians' Club, Jan. 23, 1914.

lus of high grade), comminuted fractures, formation of thin skull over hematomas, and tumor infiltration.

Percussion is equally unsatisfactory, only seldom does it give any information.

Auscultation can be credited with little clinical value. Murmurs may be present in intracranial aneurysm, narrowing of intracranial vessels, hydrocephalus, brain and skull tumors. The above resume of the physical examination shows the small value of the usual methods.

According to roentgenographic findings the subject can conveniently be divided into three parts. The first, dealing with the normal size, form and structure of the skull in the different ages, and also the varieties of skulls. The second part includes developmental errors (size and form anomalies, associated with disorders of growth); the structural changes of the bone following inflammations and new growths. The third part deals with pathological conditions of the brain that produce characteristic changes, especially signs of pressure, as indicated in brain tumor, epilepsy, migraine and psychoses.

The dimensions of the normal head are variable. The size depends primarily on the size of the brain. There is a definite relation between the size of the skull and the cranial contents. Reichardt found that the normal brain occupied 90 per cent. of the cranial cavity. Vierordt's tables give the weight of the normal adult brain as 1,000 to 1,800 grams, making an average of 1,400 and as average cranial capacity 1,540 c.c. The size of the brain and skull is greater in men than in women, and is larger in bigger individuals, although the skull is relatively larger in small persons. Racial differences also exist.

Several methods of reckoning the cranial capacity are extant, but owing to the fact that the thickness of the skull cannot be told, they are very unreliable. The thickness of the cranial tables varies from 3 to 8 m.m. in the same skull in different regions. The thickness of the skull is influenced by age, sex and racial characteristics. The roentgenogram of the head shows the thickness of the skull, in this way a definite capacity can be determined in conjunction with cephalometry.

The form of the head is dependent upon, first, racial and family peculiarities; secondly, on external influences. The racial characteristics are

so pronounced that they are of anthropologic value. We have all observed the similarity of facial and cranial development characteristics of certain families. As regards external influences, we have those exerted in intra-uterine life and during delivery; also the habitual position of the head and body, especially in infancy.

Newmayer found that the post-auricular part of the head is larger than the pre-auricular. The post-auricular part grows up to the ninth and tenth years, while the pre-auricular grows until the 25th and 26th years. As a rule, the head attains rapid growth to the 7th year, then a period of quiescence ensues up to puberty, after which growth again proceeds.

Most sutures of the base are completely ossified at the first month; the spheno-occipital suture ossifies between the age of 13 and 21. The sutures are open to advance age, while those of the vertex are usually completely ossified at the end of the second year, although sometimes not until well advanced in years. These observations are important because we occasionally find a premature obliteration of sutures, more or less extensive. Consequently on account of the disproportion between the size of the brain and the capacity of the skull, we have pressure symptoms, viz., headache, epileptic attacks, psychic disturbances, nutritional impairment and affections of the special senses, especially the organ of sight.

The Roentgen examination reveals: first, the size, shape and capacity of the skull and variations. Second, form and details of base. Third, size and shape of sella. Fourth, the thickness and consistency of the tables. On account of thickness of skull one can recognize Paget's disease or acromegaly; on account of thinning, rickets, osteomalacia, dysostosis, micromelia, osteogenesis imperfecta and tumor infiltration. Fifth, the condition of the inner tables, viz., impressions, pacchionian villi, diploic veins and sinuses.

With reference to dimensions we have a classification of long headed and short headed races. In certain cases the features are characteristic; as orthognism and prognathism. Short heads are significant of the yellow race, contrary to the American type. Determination of the form is of great importance because it shows that in a low, long skull, we have the occipito-petale brain type, therefore the Rolandic groove slants backward and is located posteriorly; but with the short

head with high vault we have the fronto-petale type, here the Rolandic groove runs upward and is more anterior. For practical purposes the dimensions are as follows: length, 180 mm.; breadth, 146 mm.; height, 135 mm.

Many abnormal developments of the skull occur either in size, shape or structure. To understand this, one must remember that the face and base are developed from cartilage, while the cranium is developed from membrane. In early uterine life centres of ossification develop, these enlarge gradually, ultimately displacing the cartilage and membrane; we find sutures showing the demarcation of the different bones; the basal sutures are often closed at birth, while most of the others close within the first year of extrauterine life. The sutures remain distinct and separate even after adolescence. The necessity of this is understood for allowance must be made for the growth of the brain. Many disorders of development are due to premature or delayed ossification.

The fact that the skull is developed from both cartilage and membrane makes it comprehensible that disorders of growth or of ossification do not necessarily affect the entire head, but if we have systematic bony disturbances we are very liable to have the facial and basal bones involved, for they are analogous, while the bones of the vault need not be affected.

From an etiological standpoint we have two large groups of form and size anomalies to differentiate. In one, anomalies of cranial contents; in the other, primary disturbances of growth of the bony skull.

We can classify them according to, first, malformations of skull due to development, such as congenital defects, clefts, fusion, ankylosis and double monster. Second, intracranial changes as microcephaly and megalcephaly. Third, those due to premature synostosis. Fourth, external causes as pressure and tension, scoliosis, kyphosis, cicatricial contraction, disturbances of growth due to central or peripheral paralyses, involving the head and neck. Fifth, systemic conditions, viz., micromelia, dysostosis, cleido-cranialis, etc.

Under inflammations of the skull we have acute osteomyelitis, syphilis, tuberculosis, actinomycosis, phosphorus necrosis, etc. Acute osteomyelitis is seldom an initial disease, but follows metastasis, due to infections of other parts of the

body; such as smallpox, typhoid and influenza. In influenza we get localized inflammation or productive osteitis and periostitis. Osteitis frequently follows wound infections or sinusitis. Acute osteomyelitis most frequently affects the frontal, temporal or parietal bones, seldom the base. The Roentgen picture can, in many cases, tell if osteomyelitis exists, and if so, to what extent; also if traumatic history or sinusitis is present, we can locate cause and seat of trouble.

Under chronic inflammatory processes we find principally lues, tuberculosis, actinomycosis and phosphorus poisoning.

Syphilitic evidence presents itself most frequently in the facial area and the cranial vault, seldom the base; if so, then the sphenoid is most often affected. The growth of syphilitic granulation tissue usually originates from the periosteum, dura, mucous membrane or bone marrow. The skull may be affected in any stage of lues. In the early stage, sometimes the external surface of the frontal, temporal and parietal bones presents swellings, due to granulation between bone and periosteum. The adjacent bones show the presence of osteoporosis, the external table shows marked grooving, the narrow spaces for the diploic veins are enlarged, due to rarefying osteitis. The tophitic areas frequently heal and leave osteophytic deposits, so that eventually we get a thickening of the outer table (exostosis), finally developing into ossifying exostosis. In later stages we get gummatous formation, especially in the frontal, temporal or parietal regions, sometimes the occiput is involved; it may be located in one or more regions. In the early stage we have foraminal cup-shaped defects with sharp outlines, later osteoporosis, finally may get sequestrum of the tables. Even in the late stages we will find attempt towards repair, so that we get evidence of osteophytic deposits and sclerotic thickening. In the first place we may get a large area of osteoporosis and brittleness, secondly, on account of periosteal and endosteal inflammation we get new bony growth; we may get here and there eburnating tendency with sclerosis of the diploe, associated with marked thickening of the skull. Hereditary syphilis manifests itself by ulcerative processes, similar to the acquired; by disturbances of growth of the sutures and joints or hydrocephalic cranial enlargement.

In the fields of otology, ophthalmology, rhinol-

ogy and odontology the Roentgen examination is of inestimable value.

In otology we can recognize malformation (*artresia congenita*); injuries, (fractures); foreign bodies; inflammatory processes, such as mastoiditis, destructive processes, viz., sarcoma, chloroma, carcinoma, cholesteatoma, caries, and hyperostoses.

In ophthalmology we can observe the presence of intracranial processes; sinus diseases; injuries, foreign bodies, form anomalies, destructions and hyperostoses of orbital walls.

Rhinology offers a very extensive field. The accessory nasal pneumatic cavities are so often the seat of disease which can not be definitely located or the extent of which cannot be satisfactorily demonstrated outside of a Roentgen examination, that a diagnosis without the assistance of the Roentgen rays is considered incomplete.

The following facts can be shown: First, size, shape and position of the cells. Second, absence of sinuses or presence of rudimentary ones. Third, presence of anomalous cells; viz., recessus frontalis, unusually large bulla ethmoidalis or sinus septum nasi, etc. Fourth, the presence of intercellular septi and their probable interference with drainage. Fifth, nature of the inflammatory or destructive process can often be shown. Sixth, tumor formation. Seventh, extent of involvement.

In odontology we can recognize alterations due to constitutional affections; injuries (fractures, foreign bodies, etc.); unerupted teeth; inflammatory processes (caries, osteomyelitis, abscess); tumor formations such as carcinoma, sarcoma, granuloma, osteoma, osteofibroma and cysts.

In the foregoing paragraphs I have only attempted to briefly state the comprehensive usefulness of the roentgenologic examination, and it is gratifying indeed, to be able to reach a more scientific conclusion, thereby enabling the profession to produce more satisfactory and permanent results.

25 E. Washington Street.

THE ETIOLOGY AND DIAGNOSIS OF BRACHIAL PLEXUS LESIONS.

GEORGE W. HALL, M. D., CHICAGO.

The brachial plexus is essentially formed by the union of the fifth, sixth, seventh and eighth

cervical roots and the first dorsal. These five roots form the three primary plexus branches and through renewed union and decussation of their fibers, three secondary branches, a lateral, median and posterior branch are formed. The fifth and sixth cervical roots constitute the upper trunk of the primary branches, the seventh cervical, the middle trunk, the eighth and first dorsal, the lower trunk.

A number of short branches are given off from the upper trunk to supply the shoulder muscles. Although fibers from more than one primary root unite to supply the muscles of the arm, the motor supply to a definite group of muscles depends for the most part on one of the roots. While the brachial plexus is thus more or less universally constructed, there are individual variations from this construction and association as recorded in the extensive literature on the subject. For example, the posterior cord may be made up of primary fibers springing directly from the cord instead of being formed from the primary branches, as is the rule.

The following anatomical classification of brachial plexus lesions may be made which is a modification of that of Grenet: (1) Paralysis of the primary nerve roots; (2), paralysis of the plexus proper; (3), paralysis of the terminal branches or individual nerves.

Paralysis of the roots may be subdivided into

- (a) Intra-rachidian (intraspinal).
- (b) Extra-rachidian (extraspinal).

Again, depending upon which of the primary branches are injured a paralysis of the roots may be classified as follows:

- (a) Superior type (Duchenne-Erb type), (upper trunk).
- (b) Inferior type (Derjerine-Klumpke type), (lower trunk).
- (c) Total plexus paralysis (all three trunks).

That portion of the brachial plexus beginning with the formation of the primary branches by the union of the five roots and extending outward to the branching of the terminal nerves is regarded by Grenet as the plexus proper, which he divides into segments.

- (a) The first segment includes the primary trunks before the state of division.
- (b) The second segment includes that part under the process of division and decussation.

(c) The third segment includes the secondary trunks, and

(d) The fourth segment includes the terminal branches and individual nerves.

Etiology. Mechanical injuries direct or indirect to the brachial plexus surpass in importance all other causal factors. While the nature and method of producing these injuries have been written about a great deal and, as Sherren puts it, many fanciful explanations have been advanced and volunteered, such as compression of the trunks between the clavicle and first rib, or transverse processes of the cervical vertebrae, the real cause is *traction*. Horsley demonstrated the effects of traction on the plexuses and later his findings were substantiated by Guillian and

This, of course, includes traction to the arm in obstetrical paralyzes during delivery, and that portion of the brachial plexus receiving the brunt of the injury necessarily depends on whether it is head or breech presentation. The bearing of heavy weights upon the shoulder or even carrying heavy weights in the hand, forcible abduction of the arm, or maintaining the arm in an abducted position during operations are factors in the production of such paralyzes. Less frequently knife wounds, bullet wounds, dislocated or fractured vertebrae, pressure on the plexus by various tumor growths including carcinoma, neuromata, aneurisms or glandular enlargements, contribute to the etiology of brachial plexus lesions.

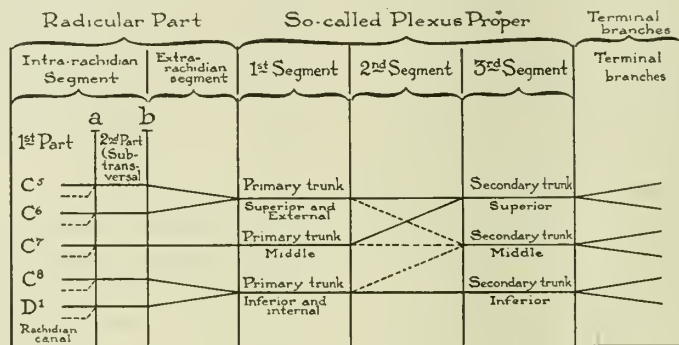


Fig. 1.

A scheme designed to show the Division of the Brachial Plexus into several segments.

(a) Line of exit at the conjugation. (b) Line of transverse processes. (External extremity)

In the rachidian canal, the anterior roots are shown unbroken, the posterior are shown as dotted.

In the second segment of the plexus, the anterior branches of the primary trunks are unbroken, the posterior are dotted.

also by Taylor. The latter has described in detail the production of birth palsies by overstretching and rupturing the nerve sheaths, fibers, and vessels of the nerves, producing marked cicatrices and resulting degeneration of the nerves involved.

Horsley states that the immediate lesion consists in tearing the nerve sheath with resulting hemorrhage and in more severe cases the nerve fibers may be severed, followed by the formation of fibrous tissue during the process of healing, thus preventing the regeneration of the nerves involved.

Traction may be made upon the arm, neck, or shoulder, including dislocations of the shoulder.

Infections of the plexus following otitis, metaphneumonic infections producing mononeuritis or polyneuritis are rather rare causes of brachial plexus lesions. Hyperextension of the arm without violent traumatism even though it may be of very short duration can produce a decided lesion of the roots of the plexus. Scleroderma on the arm and thorax involving the eighth cervical and first dorsal roots has been reported. Cancer of the esophagus producing a bilateral brachial plexus lesion is also recorded in the literature.

A not uncommon cause of such lesions is the presence of a cervical rib or an exostosis, the so-called rudimentary rib. In such instances the fibers arising from the eighth cervical and the

first dorsal roots are most frequently affected. It occurs most frequently in women and while the ribs may be bilateral in most cases the symptoms, as a rule, are unilateral, affecting the right

paralysis of the fifth and sixth cervical roots. It may be the residue of a whole brachial plexus lesion which has become localized to these individual roots or the lesion may be confined to

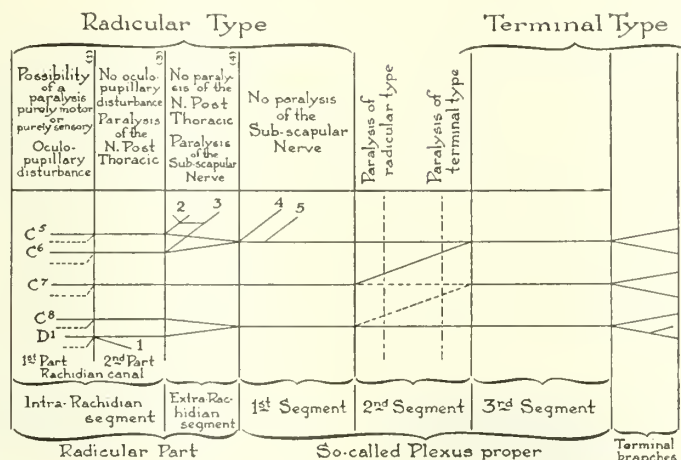


Fig. 2.

A scheme of the different forms of Paralysis of the Brachial Plexus.
(Regarding the division of the Plexus into segments, refer to Fig 1)

1. Communicating branch of 1st dorsal with the sympathetic. - 2 Branch of the angular and of the rhomboid.
- 3 Branch of the N. Post Thoracic - 4 Sub-scapular nerve 5. Superior part of sub-scapular nerve.

side more frequently. Not more than five to ten per cent. of cervical ribs produce symptoms, and these symptoms come on usually during adult life.

Symptoms. The most frequent form of brachial plexus paralysis is the Duchenne-Erb type, which involves the upper or superior portion of the brachial plexus at its primary division. This

these branches from the beginning, as is often the case in obstetrical paralysis. The muscles most constantly involved in this type are the deltoid, the biceps, brachial anticus, supinator longus and supinator brevis. Less frequently the supra and infra-spinati muscles, and the pectorals are involved. The paralysis of these muscles have not all the same importance.

Motor Symptoms. The arm in this form of paralysis hangs motionless at the side of the body. The hand is in a state of pronation as the humerus is rotated inward. The point of the shoulder is elevated if the lesion does not extend high enough to involve those muscles of the shoulder supplied from that portion of the cervical plexus before the fifth cervical root is given off, which includes the trapezius.

Sensory Disturbances. First, I wish to state that in this form of paralysis there may be no sensory disturbances, although Rendu, and Raymond have established the constancy of the presence of sensory disturbances at the time of the injury, but state that they may rapidly disappear and when their absence is noted it is due to a tardy examination. The anesthesia when present is in the region of the circumflex and musculocutaneous distribution corresponding to the

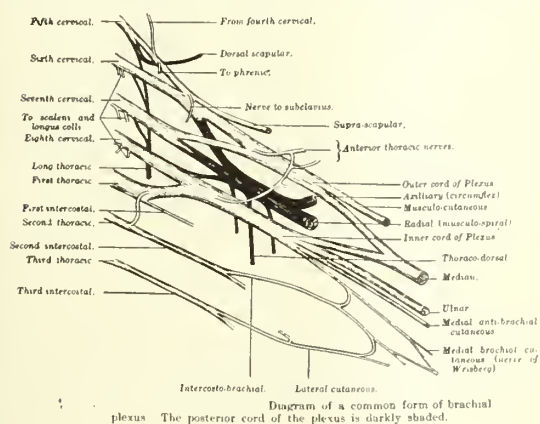


Fig. 3.

type was observed by Duchenne following difficult labors and by Erb in other cases, and christened by Bernhardt by the name type Duchenne-Erb. This form of paralysis corresponds to the

fifth and sixth cervical roots, and perhaps including the seventh cervical root. These sensory disturbances are both epicritic, which is disturbance to light touch and slight degrees of temperature variations, and protopathic in character, which is disturbance of pain sense and extreme degrees of temperature. In such instances these disturbances cover approximately the same extent of surface. Experiments of Fieus have shown that in Duchenne-Erb paralysis the lesion is usually located distal to the union of the anterior and posterior roots. Trophic and vaso-motor disturbances are inconstant. Fibrillary twitchings of the muscles involved with reaction of degeneration may be present, depending on whether the lesion is complete or incomplete.



Fig. 4. A lesion of the brachial plexus on right side showing the elevation of the right shoulder.

Fig. 5. A lesion of the left brachial plexus, showing the elevation of the left shoulder.

The inferior radicular paralysis, the so-called Dejerine-Klumpke type, which is said to have been first described by Flaubert in 1827, results from lesions of the inferior or inner primary trunk formed by the eighth cervical and first dorsal roots. This type of paralysis includes those groups of muscles especially supplied by the median and ulnar nerves. It is frequently the residue of a total plexus paralysis and is the most common form next to the Duchenne-Erb type.

Symptoms. Most characteristic involvements are the paralysis, pain and atrophy of the small muscles of the hand, presenting in some instances the Simian hand. We find here atrophy of the thenar, hypo-thenar and interossei muscles which resemble somewhat the picture of a

progressive central muscular atrophy. The picture of lower brachial plexus lesion is rendered more complete when the ramus communicans of the cervical sympathetic ganglion associated with the first dorsal root is involved. The paralysis of the dilator pupillae on the same side as the lesion is the result, giving the characteristic eye symptoms, namely, narrowed pupil, narrowed palpebral fissure and end-ophthalmos. The pupil does not dilate to shade, but may dilate in most instances to cocain as the paralysis is not usually complete.

The following case illustrates this form of paralysis:

Mrs. L. C., aged 44 years, was referred to me March 28, 1912. She complained of weakness in the right arm and hand, pain in the right arm extending down to the wrist, even to the tips of her fingers. She also complained of numbness in the ring and little finger. There was tenderness over the course of the nerves; the hand became cold easily. At other times it felt hot. These symptoms were first complained of in January, 1912, three months previous to this examination. She stated that she had been able to do all of her own work until one month previous to the examination, since which time her pain was so severe that she had to have morphin administered upon her physician's advice because of the exacerbation of pain. Her personal and family history otherwise was negative. Beneath the nail of the third finger she complained of a sensation of smarting as though salt were present. She noticed at times a cramp in the fingers and hands, accompanied by a blanching of the fingers. She stated that the use of the hand caused it to turn white, and the arm to become cold. Examination showed a small trophic ulcer on the tip of the third finger of the right hand near the nail. The muscles of the forearm showed decided atrophy. The electrical reactions were sluggish but no positive reaction of degeneration present. Considerable pain was elicited on movement of the arm or pressure over the inner portion of the arm. Further examination showed narrowed palpebral fissure of the right eye, the right pupil was smaller than the left and did not dilate when shaded; the eye was sunken in appearance. There was no hoarseness and otherwise no evidence of paralysis of cranial nerves. The radial pulse on the right side was absent and chest findings negative. The combination of symptoms in this case led us to suspect the presence of a cervical rib and X-ray examination verified this diagnosis. She was operated on by Dr. A. B. Kavel, a cervical rib was found, removed, and the patient made a very good recovery.

This case demonstrates the usual involvement of the brachial plexus due to the pressure from the extra rib.

Case 2. The second case, a man, aged 26 years, an iron moulder by occupation, was admitted to the service of Drs. Davison and Humiston at the Cook County

Hospital, on November 28, 1914, diagnosed as a cervical rib. The present complaint: Patient complains of pain in his left arm, shoulder, and side of the neck and face, becoming more severe when he gets cold. He states that his left arm and hand are weak and that he has pain in them when he attempts to work and



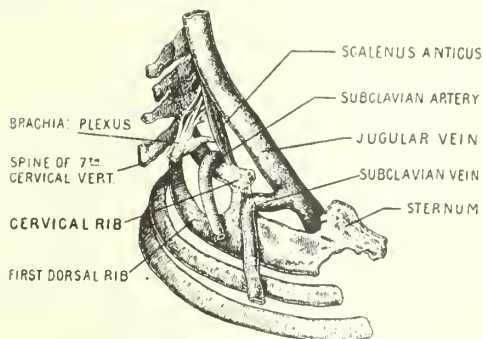
Fig. 6. A case of cervical rib on the right side showing the atrophy of the muscles of the hand.

finds it difficult to pick up objects with the left hand. His present trouble began about two years ago, at which time he was quite ill for two weeks, complaining of headaches so severe that he almost screamed, and accompanied with a high fever. At that time he had severe pain in the back of his neck. Since that time the left arm has given him more or less trouble. About one year ago he noticed numbness in the little finger of the left hand followed in turn by increasing numbness in the third, second and index fingers and the thumb in order. They felt cold and numb at times. At the time of our examination he complained of pain in the left shoulder and left side of his head and face. Inspection showed, as in the previous case, a narrowing of the left palpebral fissure. However, there was no difference in the size of the pupils. The entire forearm showed that there were disturbances of sensation to touch and pin prick extending over the outer portion of the left upper arm, the anterior portion of the chest to the nipple, and the posterior portion over the scapular region. There was marked disturbance of tactile, pain and temperature sense on the left side. The area of anesthesia extended upwards, including that portion of the left side of the face corresponding to the distribution of the fibers of the upper cervical nerves. A slight paresis of the right side of the face was present. The right arm in the region of the deltoid muscle showed fibrillary twitchings with decided dissociation of pain and temperature sense. The symptoms in this case involved the spinal cord proper. The important differential points were the dissociation of pain and temperature sense on the right side together with paralysis on the left side, which are the characteristic findings in cord lesions such as syringomyelia or hematomyelia.

Case 3. A. M., aged 50 years, Polish nationality,

occupation given as laborer, admitted to the service of Dr. Rowan, Cook County Hospital, September 2, 1914, with the diagnosis of skull fracture. The following history was obtained: At 10:00 p. m., September 1, while partially intoxicated, the patient states through an interpreter that he fell down a flight of stairs, head foremost, striking one of the steps. He was not rendered entirely unconscious, but was unable to walk when he was picked up. He was taken home in a carriage and was able to converse very well and at that time he noticed that his left arm was very weak with slight weakness in the left leg. He entered the hospital with a diagnosis of cortical brain lesion.

Examination showed a scalp wound on the right side of the head. The left arm was completely paralyzed. The left pupil was smaller than the right, no evidence of a facial paralysis. There was a scar on the tongue which was the result of an old operation. There was apparently a slight depression in the skull near the laceration on the right side of the head. Upon cutting down no fracture could be found. Examination of spinal fluid showed a normal clear fluid under normal pressure. Blood pressure 146 mm. The X-ray showed no evidence of the skull fracture, nor fracture of cervical vertebrae. About ten days later I was asked to make an examination of the patient. In addition to the above findings, I found the left palpebral fissure narrowed; the eyeball sunken, and the left pupil smaller than the right. Beads of sweat were standing out on the right side of his brow, nose, face and neck, while the left side of his face was only moist. There was tactile and pain sense disturbance over the outer portions of the upper left arm and over the entire forearm. On these physical findings, in connection with a history of the case, a probable diagnosis of a lesion of the brachial plexus was made. The patient was dismissed from the hospital October 10 considerably improved. He was able to move the left hand fairly well, and showed very good movement of the fingers. The treatment was rest to the arm.



Note the angle of the cervical rib, the sharp bend of the subclavian artery behind the scalenus anticus, and the position of the venous plexus.

Fig. 7.

These three cases presented evidences of involvement of the cervical sympathetic under different conditions. In quoting Nauyn I wish to say that the sympathetic fibers do not always go

by way of the first dorsal root. They sometimes pass by the upper cervical root. Gegenbauer states that the sympathetic fibers pass normally through the fourth and fifth cervical roots to the cervical median ganglion. If his observations are correct then evidences of sympathetic involvement may be present, in some instances, in the Duchenne-Erb type of brachial plexus lesions. While the oculo-pupillary signs are not present in all cases of inferior paralysis or even in total paralysis their presence is of extreme importance as a general rule in locating the lesion to the inferior brachial region. In one of these cases there was evidence of atrophic disturbance on the end of one finger, as evidenced by a small ulcer formation, which coincides with the usual statements that trophic disturbances and vasomotor troubles are more frequent in the inferior than in the superior brachial lesions. Their presence or absence are in accordance with the gravity of the lesion. The sensory disturbances, aside from the subjective pain in the inferior form of paralysis involves the inner surfaces of the arm and the ulnar portion of the forearm corresponding to the distribution of the ulnar and to a less extent the median nerve.

Differential Diagnosis. It is self-evident that the etiology of brachial plexus lesions should be considered as an important aid in diagnosis. However, in every case there is a chance for error. The affections which mask the diagnosis are hysteria and organic maladies of the brain, cord, muscles and peripheral nerves. In cases of shoulder traumatism one must avoid attributing to the radicular paralysis the importance due to a luxation, a fracture of the tuberosity or to a fracture of the anatomic neck of the humerus. Clinical and radiographic examination will ordinarily prevent such a mistake.

Hysterical monoplegia may be differentiated by the normal electrical reactions, absence of muscular atrophy and the presence of segmentary topography of the sensory disturbances. Hysteria, however, may be confounded with paralysis of the terminal type of brachial plexus lesions, but ordinarily it does not confine itself to the region of distribution of one peripheral nerve. More often it extends over the region supplied by several nerves and in that way it may simulate a complete radicular paralysis. It also

may simulate that rare type of brachial plexus lesion which is purely sensory, due to an intrarachidian involvement of the sensory roots alone. The personal and family history, the stigmata of hysteria and the various zones of anesthesia or hyperesthesia on different portions of the body, the narrowing of the visual field, serve as aids in the differential diagnosis. But these symptoms are sometimes wanting in hysteria, and it must be by examination of the paralysis alone that the diagnosis is made. However, the mixed motor and sensory paralyses of hysterical origin do not correspond exactly to the Duchenne-Erb or the Dejerine-Klumpke groups, but conform more exactly to the mixed radicular type. While hysterical paralysis is not often accompanied by muscular atrophy so may it be said that in slight plexus lesions there may be no



The distribution of the sensory loss after lesion of the brachial plexus (Heath)

Fig. 8.

perceptible atrophy. On the other hand while electrical reactions are ordinarily normal in hysteria, the literature records a case presented by Rendu before the Societie de Medicine des Hopitaux (Paris), in which there was slight diminution of the faradic and galvanic excitability of the muscles involved and which did not prevent Ballet, Raymond and Babinski from agreeing on the diagnosis of traumatic hysteria even though sensory disturbances were absent. Rendu's studies emphasize the fact that in hysteria the sensory disturbances are more pronounced than the motor disturbances. Adamkiewicz describes under the name of "Monoplegia Anesthetica," two cases clinically characterized by anesthesia of a whole limb due to a primary

lesion of the posterior roots and bases his diagnosis of such an organic lesion on the absence of the general signs of a neurosis and on the presence of trophic disturbances. Rendu, Babinski

and Freud substantiate this diagnosis by similar diagnoses.

Raymond emphasized one important point in the differential diagnosis, namely, that the persistence of normal sensation in a triangular area on the inner portion of the upper arm corresponding to the distribution of the internal brachial cutaneous branch which is given off by the second and third dorsal roots, speaks in favor of a plexus lesion. He considers this area of normal sensation as distinguishing



Fig. 9. A lesion of the spinal cord proper, showing an elevation of left shoulder, similar to brachial plexus lesion.

between an organic and a hysterical lesion.

Medullary lesions must be carefully considered since cord lesions can complicate the radicular lesions, and there may be a concomitant cord compression or a secondary hematomyelia.

The gravity of the trouble and the presence of

one arm, but at the onset other members may be temporarily involved. The paralysis resembles usually the superior type of brachial plexus lesions, but the absence of sensory symptoms together with the possible history of an epidemic would be sufficient ordinarily to make a diagnosis. However, I might state that there is a possibility of an involvement of the motor fibers after leaving the cord, and under such circumstances it might be impossible to differentiate it. Such a paralysis clinically might be differentiated from an acute anterior poliomyelitis by the history of the case, the positive findings in the spinal fluid of an increased globulin content, and an increased number of lymphocytes in the latter disease.

Caries of the spine involves the dorsal more frequently than the cervical portion of the spine; pressure over the vertebrae ordinarily elicits pain; the spine is usually rigid; kyphosis may be present, with a possible localized pus formation. The symptoms are more frequently bilateral, associated with a temperature, and probable tuberculosis in other portions of the body. X-ray examination usually will show some changes in the vertebrae.

Meningomyelitis is most frequently of syphilitic origin and syphilis in other portions of the nervous system with the assistance of positive laboratory findings will usually make the differential diagnosis.

In rare instances, a hemipachymeningitis might be present to complicate the diagnosis of a pure brachial plexus lesion. I merely mention this as a possibility, in rendering the diagnosis of brachial plexus lesions difficult.

ILLUSTRATIONS.

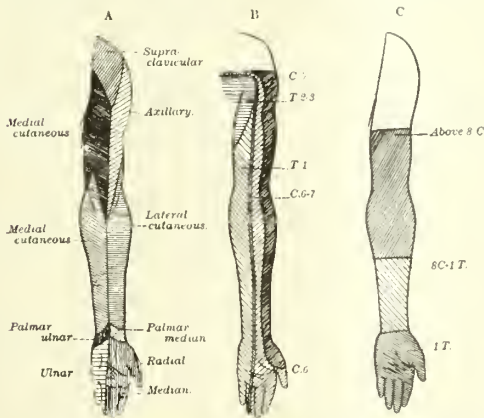
Figs. 1 and 2. Modification of illustrations by Grenet.

Fig. 3. Taken from Morris' Anatomy.

Figs. 4, 5 and 9. From Raymond's *Clinique des Maladies du Système Nerveux*.

Figs. 6 and 10. From Turner and Stewart's *Diseases of the Nervous System*.

Fig. 7. Illustration from Keen's article in the *Jour. Amer. Med. Sciences*, vol. 133, on "Cervical Rib."



-Types of anesthesia. A, peripheral (from Hasse); B, spinal, root type of Chiapault (from Kocher); C, cerebral, medullary type of Chiapault (from Brissaud). (After P. C. Knapp, *Tr. Amer. Neurol. Assoc.*, 1897.)

Fig. 10.

symptoms, motor and sensory, involving the opposite of the body as well as the lower limbs will ordinarily be sufficient to differentiate. Acute anterior poliomyelitis may be confounded with a paralysis of radicular origin when confined to

BLOOD-PRESSURE, FROM A CLINICAL STANDPOINT.*

GEO. RICHTER, M. D.,

ST. LOUIS, MO.

Professor of Medicine, National University; Visiting Physician to the City Hospital.

At present medical education puts much weight on physical and chemical methods for

*Read before the Macoupin County Medical Society, July 25, 1915.

diagnosis, at the same time neglecting physics and chemistry as aids in treatment. Very marked progress in our science has been made in recognizing physiologic and biologic facts, or in findings claimed to be facts. This progress has created a sort of enthusiasm which is liable to interfere with that sober judgment without which we should never be. Clinical medicine is not a science of today or yesterday, or yesterday. Its foundation was laid thousands of years ago. In those times people devoting their energies to our science were not blind or deaf. But the recent graduate, well drilled in the many new methods, is apt to assume that only the new is true and only the latest the correct.

Such statements may sound surprising when coming from one who has worked for some forty years in laboratories, in clinics and hospitals as well as in a somewhat extended, if not lucrative private practice.

We may define medical progress of our days as consisting in a verification of many older theories, reducing some vague general impressions to figures and numbers, and some of the theories to ciphers or zeros. We have not been successful all over the territory, for there are still "Christian scientists," Osteopaths, Chiropractors and what not, whose very existence should make us blush.

The great danger accompanying our recent progress is that of under-estimating careful and thorough clinical observation. All the methods available used in conjunction in a given case furnish, after all, nothing but a flash-light picture of a condition at a given time.

There is, with a very few exceptions, not one laboratory method, not one chemical reaction, biologic finding or physical determination which in itself, by virtue of its results, proves anything whatsoever, if not used in conjunction with clinical observation. It must, however, be recognized, that our new progress has furnished some wonderful aids to clinical understanding by either verifying or refuting a proposition.

A case in point is the study of the forces governing the circulation of the blood. The importance of a proper regulation of the blood-supply in health and disease is self-evident. That the blood-supply to the various organs varies with physiologic or pathologic conditions everybody knows. The dominating factors are

little known. The contraction of the ventricles propels the blood through the arteries, rhythmically, the rhythm is discovered by the pulse-beat; it is lost in the capillaries and in the veins a steady flow is the rule.

Is the heart the only active part of the system? I believe not! It would seem plausible that the blood-vessels are themselves active in propelling the blood. Their walls consist of circular and longitudinal smooth muscle fibers, mingled with elastic fibers. We know only of sphincter muscles maintaining a tonic contraction which relaxes on occasions. All tubular tissues endowed with smooth fibers exhibit regular rhythmical contractions: the entire intestinal canal, the bile duct, the ureters, etc., changeable in energy and extent according to functional activity. An increased rhythmical contraction of blood-vessels is plainly visible in aortic regurgitation; the blanching and reddening of the tissues with each pulse-beat. The blanching means an active contraction, the reddening a dilatation of the smaller vessels. We must conclude that the contraction of the ventricle is followed immediately by a wave of contraction of the arteries, beginning at the aorta. This explains also the fact that after death the arteries are found empty; the last arterial contraction squeezed the blood into the veins. If the heart was the only active agent, the last contraction of the heart in death must fill the arteries with blood. To the pressure issuing from the heart we must add the active pressure exerted by the arterial muscles. Both together indicate the energy of the pulse. And this again is modified by several important agencies.

An increased resistance will raise, a decreased resistance will lower the pressure and influence the flow of the blood inversely.

When we measure the pressure which a current confined in an elastic tube exercises upon its wall, we know nothing as yet as to the velocity of the flow. There may be a high pressure with a slow current and a low pressure with a swift current, and vice versa. Therefore, determining the pressure leaves us in the dark as to the amount of function, the supply of pabulum to an organ and the washing out of waste products. Still we take it for granted that a great variation in pressure, shown by the rhythm of the pulse-wave and its systole and

diastole must favor an active flow, the progress of the blood. If this was so, a flabby wall, the cause of the dirotic pulse, and an aortic regurgitation with its excessive variation of pressure would be ideal conditions.

This leads us into an inquiry as to the components of resistance. There is in the first place the normal tone of the elastic fibers in the arterial wall, as constant as that of elastic rubber, giving when stretched, contracting when released. Secondly, the variable tone of the smooth muscle fiber, now in steady contraction like a sphincter muscle, again perhaps in a semiparetic condition—flabby, or in great activity, when functioning. It is plainly shown in physiologic and pathologic anemia and hypere-mia, under the influence of vasomotor nerves.

The vessels are imbedded in soft or in dense tissues, in the skin, the adipose tissue, muscles, where they are endowed with a thicker coat of smooth fiber, or in lungs, brain, osseous tissue. Whatever the surroundings, they offer a certain amount of resistance to expansion, e. g. during muscular contraction and in proportion to the amount of tissue juice; it is greatly increased in edema. It must also be potent during an increased activity of secretory glands.

Not only does the circumference, the immediate surrounding of a vessel offer resistance, also the periphery, the distal end, the walls of the smaller branches into which it divides, the capillaries. In disease we discover passive congestion, or an acute local anemia as additional causes of resistance. Inflammatory processes involve an acute congestion leading to a vascular condition analogous to an aortic regurge: capillary pulsation, felt by the patient when sensitive nerves are in close proximity to the inflamed area. It is due, of course, to an increased and purely local pulsating activity of the arterioles, accompanied by a retarded flow of the blood, exactly as in the "Bier hyperemia."

Another variation of resistance to the blood-flow and blood-pressure we find in the physical condition of the blood itself, in an increased viscosity—a thicker liquid flows more slowly—in an increase of red cells in erythrocythemia, a fall of pressure generally, but not always, in anemia. Plethora tends to increase pressure. Normal functional activity of glands elevates pressure with an increased flow. I enumerate

these details to show that changes in pressure may be entirely independent of the force of the heart-beat.

Of the many other factors which may influence blood-pressure I will mention but one: the influence of the vaso-motor nerves. Their effect may be purely local, or systemic, or general. It may be due to a local, or a systemic or a psychic cause. According to our present knowledge we must take it for granted that all vasomotor action is in close connection with the internal secretions, in the first place that of the suprarenal glands, the adrenalin or epinephrin.

Blood-pressure is regulated in our organism in a way which is still clouded in much mystery. Most of the alleged facts are founded merely on hazardous theories. The relation between kidney-function, arteriosclerosis, valvular diseases of the heart, brain-pressure, mental worry, psychic depression and exaltation to blood-pressure are by no means elucidated; they require still much careful analytical study.

The simple recording of pressure findings without most detailed clinical data is a sterile undertaking, the more so, as our methods of obtaining blood-pressure are lacking in precision. The usual way of inflating a broad cuff placed around the upper arm, thus constricting the brachial artery and reading from some kind of manometer the amount of pressure employed to just make the pulse disappear, is somewhat crude. We compress not only the artery, but also the veins, inducing a venous stasis with rising pressure; we press away an unknown, but certainly variable, amount of tissue-sap, we constrict the nerve-trunks and create uncontrollable nervous reflexes in the vasomotor system. And very frequently the whole procedure exercises a marked effect upon the mental condition of the patient also influencing pressure findings.

Finally, we determine by such methods the pressure, if anyway correct at all, in only one peripheral artery, in one extremity, far away from vital organs. That the pressure in some visceral organ of whose changeable blood-supply we are well aware, liver, intestines, lungs, etc., would be immensely more important to know, there is no question. How glad would we clinicians be, if we had a method to determine blood-pressure in the kidneys, or within the heart, providing it would indicate the energy of the flow.

And even the findings of pressure in one brachial artery may differ not only from that in the femorals, but even from the pressure in the other brachial, for instance, in aneurysm of the aorta, where it is almost pathognomonic. I have verified this in a large series of cases.

If, therefore, our estimations of pressure within the brachial artery possess only a limited value from the standpoint of methods of precision, they are of, I might say, enormous value, namely in the sense of comparative results in conjunction with the clinical aspect.

Mechanical contrivances to record blood-pressure are numerous. The manometer is either the mercury or the spring or diaphragm type. The latter is objected to by some as not reliable, because the spring might weaken. It can be compared, however, as to its accuracy very readily with any mercury manometer. Nor is the latter always quite reliable; when the glass wall is not perfectly smooth and when the mercury has a film of oxide floating on top, the momentum of the pulse-wave exaggerates the excursions of the mercury column. The spring instrument, which I employ now exclusively (the "Tycos") has certain valuable advantages apart from its compactness, etc. A close observation of the movements of the needle when compression is made very gradually discloses characteristics of the pulse much like the sphygmograph does and recognized by the palpating finger only after considerable experience. The slowly rising pressure will reveal at one spot a quickening of the needle corresponding, it is believed, to the so-called diastolic pressure. We may now form an opinion of the character of the pulse-wave; we recognize diastole, alternation, delayed apex, sudden or gradual rise and fall of the waves. The extent of the oscillation is even more conclusive than in the sphygmographic tracing. I consider this feature of particularly great importance, after an experience gained from many thousands of sphygmographic tracings in my collection. The *pulsus bisferiens* (in aortic stenosis) which is hardly recognized by palpation, becomes plainly visible. On further rise of manometer pressure the excursions of the needle become smaller and tend to disappear. The impulse of the pulse-wave upon the proximal part of the constricting cuff maintains some small pulsatory movements and ren-

ders the determination of systolic pressure, namely the complete suppression of the pulse, quite indistinct. Either palpation of the pulse at the wrist or auscultation of the brachial artery distal from the cuff must be resorted to to discover systolic pressure. The vivid oscillations of the mercury column hide the details enumerated before.

To estimate diastolic and systolic pressure, both the tactile and the acoustic method should be used in every case, for there are many in whom radial pulsation disappears before the pulse sound at the brachial disappears, and vice versa.

Systolic pressure, as stated before, is obtained at the moment when the pulse wave vanishes. Evidently we have at this moment overcome by compression of the brachial artery the force with which the heart and arterial muscles have propelled the blood through this vessel.

Diastolic pressure is defined as representing the pressure prevailing in a vessel during diastole of the heart, or more correctly speaking: the pressure prevailing at the distal side of the aortic valves at that time. For when the aortic valves leak this pressure becomes at once very much lower, approaching zero. We discover a similar condition in sclerotic dilatation of the aorta.

In mitral stenosis we usually find a comparatively high pressure though the heart in consequence of the narrowing of the mitral orifice is poorly supplied with blood. A compensation has taken place due to increased tone of the arterial muscle favoring circulation. Here also diastolic pressure can only mean the one prevailing at the aortic valves.

While blood-pressure is identical with systolic pressure, pulse-pressure is understood to be the difference between systolic and diastolic pressure. It is grossly exaggerated in aortic insufficiency and frequently diminished when general pressure increases—a bad symptom!

A question frequently asked is, what should be considered a normal blood-pressure? It varies very much according to age, sex and a large number of circumstances and individual conditions. Within certain limits the rule that systolic pressure should be one hundred plus the age is approximately applicable. Thus a person 25 years old would have about 125 mm. Hg.,

with 50 years 150 mm. But a child of 6 years with 106 and a person of 80 years with 180 would be far from normal. By the way, the estimation of blood-pressure in pronounced arteriosclerosis must be done with particular care. In a rigid artery the condition of the sclerosed wall will offer resistance which is not due to the blood current itself. In a calcified artery, in a so-called pipe-stem brachial or goose-neck wall brachial compression may cause infraction followed by embolism and gangrene of the fingers. One must also be careful in cases with an excessively high pressure, when findings should be obtained quite rapidly. The powerful compression squeezes the nerve-trunks and causes of paralysis due to the method are on record.

Nephritis does not always cause high pressure, as some seem to think, nor does arteriosclerosis. It is highest usually in so-called hypertension nephritis, a chronic ailment that is at times amenable to successful treatment. Papaverin, iodides (sajodin), and diuretin give good results if taken for a long time in moderate doses, together with appropriate diet, which need, however, not be free from proteids when there is no retention of urea. Urgent cases are promptly relieved by venesection. Other conditions with high pressure are eclampsia (of diagnostic value!), all kinds of edema during the attack (e. g. lead edema) but usually not during the intervals and the initial stage of acute parenchymatous nephritis. Ordinary chronic albuminurias are not characterized by high pressure. I have not been able to verify the recent statement that in high pressures the pupils are dilated.

A very low systolic pressure occurs in all weakening and wasting diseases, in anemia, in dementia praecox, in Addison's disease (which is not always betrayed by bronzing of the skin) and as a rule in chronic myocarditis. Yet a weak heart does not always show low pressure. Pressure may be high though ventricular contractions are feeble, namely when there is an increased peripheral resistance as in cyanosis. In angina pectoris pressure is more often high than low. It is low, when visceral (abdominal) vessels are filled, a condition that may even lead

to "bleeding to death into one's own intact vessels." A hypodermic of adrenalin is here the remedy; it contracts the visceral vessels and dilates the coronaries.

Diastolic pressure is lowest in aortic regurgitation, also in tuberculosis (pulmonary), and in chlorosis, in chronic anemia.

Pulse pressure, the difference between systolic and diastolic, is most marked in aortic insufficiency, in aortic sclerosis (rarely in aneurysm), in mitral leakage and in some cases of hypertension nephritis, where it is found at a high level, e. g., systolic 250 and diastolic 125, a difference of 125 mm., while the average pulse-pressure may be stated to be about 40 mm.

Pulse-pressure is low in aortic and mitral stenosis, in most all congested conditions, in plethora, etc.

But all such statements and figures should be accepted with great reserve, for an individual equation is much in evidence. It is after all only the clinical aspect in a given case which can decide if a pulse reading means disease or health. It is wrong to generalize in such matters, we must individualize. We must consider carefully whether a high pressure is not necessary to maintain good circulation, or whether it threatens danger from apoplexy or hemorrhages somewhere.

We should diagnose the patient rather than the disease.

Modern medicine offers an almost bewildering multitude of methods for diagnosis. But the most ancient ones, inspection and palpation, are still the most important. We must learn to feel with our eyes and to see with our fingertips, which as far as the pulse is concerned is a lost art. And only too often are the newer methods used to impress the patient with awe. Be careful! It is much easier to suggest disease than to suggest health. Whatever methods you may apply, be proof against self-suggestion and self-deception.

The sphygmomanometer, if not judiciously used, will be a deceiver and a fraud; if used with proper appreciation of its limitations it is one of the most welcome aids to our best efforts.

Metropolitan Building.

INTERPRETATION OF BLOOD FILMS.*

A. L. MANN, M. D.

ELGIN, ILLINOIS.

One of the routine features of up-to-date clinical investigation and the one which in many instances tells the whole story is the examination and correct interpretation of the morphotic elements which are to be seen in a properly prepared blood film, especially when supplemented by personal observations of the clinical manifestations, which latter feature is one of the convincing arguments favoring the performance of blood work by the physician conducting the physical examination of the patient.

It is conceded that such a requirement adds to the overload which the human medical dynamo is already carrying, but I hope to make it appear that it can be so simplified as to fully compensate the busy doctor for the little extra demand on his time.

In the systemic circulation the blood consists of plasma in which are floated the red and white corpuscles and blood plaques.

Normal red corpuscles are seen as circular, discoid, non-nucleated cells, which in well made films lie perfectly flat with an even surface and sharply defined contour unless mechanically deformed in the process of spreading, and varying in size from 6 to 9 microns (approximately $1/4,000$ to $1/3,000$ of an inch).

Leucocytes are the so-called nucleated cells; they range in size from 5 to 15 microns in diameter as usually observed in the dried film, and are of many varieties, some of which are regularly present in normal blood in the proportion of one white cell to about 5 or 6 hundred red cells; when this proportion is seriously disturbed, or when other forms of white cells are present in any amount, a pathological condition is indicated. For all practical purposes they may be classed according to their size, morphology and staining proclivities into: small mononuclears or lymphocytes, large mononuclears, polynuclears, eosinophils, all of which are normal, and basophils and myelocytes, both of which when present indicate abnormal conditions.

Blood platelets, which in the fresh specimen resemble diminutive red cells, always appear in

the film as masses or clumps of irregularly shaped bodies, 2 to 4 microns in diameter and always taking the basic stain. Their significance is as yet so undetermined that I consider them a negligible factor in film examinations.

The plasma, composed of fibrin and serum, is also of negligible interest in smears.

The first essential in obtaining films for examination is a properly prepared slide. A thin, clear, white glass slide, with ground edges, thoroughly cleaned with soap and water, rinsed in hot water, polished with a piece of clean cotton or linen—I prefer a piece of an old sheet that has been laundered until it has been relegated to the rag-bag—and finally flamed over a Bunsen or an alcohol flame, is to be preferred, and is what is ordinarily used; in an emergency, however, a piece of ordinary window glass cut to size 3x1 inches and prepared as above, can be used, but it will be found desirable in such cases to use a cigarette paper or a darning needle as a spreader to insure an even film.

In making the puncture a sterilized bayonet pointed needle will answer; puncture fairly deep and quickly; no previous stimulation of the capillary circulation by friction should be resorted to and the drop of blood should be allowed to exude without pressure; I have found that this result does not always follow the ordinary needle puncture, hence I use the spring lancet devised for that purpose, with very satisfactory results. Wipe away the first drop with a dry sterile cloth and collect the next drop *before it becomes too large*, on one end of the slide; then quickly touch the drop with the end of the spreading slide, NOT by placing the slide *over* the drop but by sliding it along the surface of the receiving slide *into* the drop which will quickly flow along the line of contact and can then be spread by drawing the superimposed slide evenly and quickly across the surface of the receiving slide; if this technique be properly executed the result will be a thin smear with no rouleau formation and few overlapping cells. I make it a point to make at least 2 smears; they are allowed to dry in the air and placed with the film surfaces in apposition until ready for staining and examination.

After 20 years of experimentation with various stains I have adopted the eosinate of methylene blue as a routine blood stain to the exclu-

*Read before the midsummer joint meeting of the Aux Plaines Branch of the Chicago Medical Society and the Kane County Medical Society, at Mooseheart, Ill., Aug. 11, 1915.

sion of all others; I prepare this stain by making separate one per cent. methyl alcohol solutions of eosin, water soluble, yellow shade, and Merck's medicinal methylene blue, and mixing them in equal parts in small quantities—say an ounce or two; flood the film with this mixture without any previous fixation for about one minute, then add a few drops of distilled water, carefully tilting the slide from side to side until the mixture is homogeneous; allow to stand for another minute or two, wash in distilled water and dry over a flame; the film is now ready for examination; if, however, accentuation of any particular elements may be desired, and especially if searching for malarial parasites, I again cover the film with Giemsa's stain for about five minutes and wash and dry as before; thus it will be seen that a specimen can be prepared for ordinary examination in less than five minutes and for malarial organisms in less than fifteen minutes; the slide can then be transferred to the stage of the microscope for examination with an immersion objective, thereby obviating the necessity of using balsam and a cover glass. I use, almost exclusively, a 1/12 glycerin lens, thereby saving much time in being relieved of the necessity of cleaning my objective at least every day, and I get very satisfactory results.

One minute's observation of the stained film will now demonstrate whether we have a typical or an atypical specimen to interpret; if the erythrocytes are fairly regular in size and shape, evenly stained and showing no nuclei nor intracellular organisms, we turn our attention to the leukocytes, making a differential estimate as we pass over the field.

In a normal specimen properly spread, under a 1/12 objective, they will not average more than one or two in each field, although at the terminal edge of the spread they may be found in groups of from ten to thirty; a little practice will enable the examiner to estimate whether there is any numerical disproportion of white cells indicating either a leukocytosis or a leukopenia which would require a blood count to fully determine; relatively, they will be found in the proportion of from 60 or 70 polynuclears to 30 or 40 mononuclears and 1 or 2 eosinophils; the protoplasm of the polynuclear cell is filled with a fine granulation, that of the eosinophil is covered with coarser granulation, both of which

have an affinity for the acid (eosin) stain, while the cytoplasm of the mononuclear cell when exposed, displays a stippled appearance with an affinity for the basic (blue) stain.

A little practice on a few smears of known normal blood will so familiarize one with the general aspects of a typical specimen that any unusual appearance will at once arrest the attention of the observer and the problem of interpretation will begin. Atypical conditions present may be due to:

1. Artefacts—mechanical distortions due to imperfect technique.
2. Parasitic invasion.
3. Pathological cell degeneration or proliferation.

Artefacts appear as crenations, blisters, vacuoles, concavities, etc., which may be mistaken for the effects of chlorotic or pernicious anemia; sometimes a film is so impaired in this manner as to make it useless; extensive rouleau formation throughout the film likewise destroys its usefulness.

Parasitic invasion may be manifested by the appearance of bacteria or filaria interspersed among the cells or occasionally included within the cytoplasm of a phagocyte, or by the presence of protozoa within the cell itself. Bacteremia is rarely so pronounced as to present the organisms so numerous in a smear as to be readily detected and identified; in only one case in my career do I recall such a specimen, which was taken from a child in the incipient stage of typhoid fever, in which the typhoid bacilli in pure culture were present in abundance.

When clinical indications suggest the possibilities of a bacteremia a culture should be made. I have recovered the gonococcus in pure culture from 2 drops of blood taken from the little finger of a patient exhibiting a subacute arthritis of the knee joint but strenuously denying any specific possibilities; the blood findings compelled admissions, and subsequent puncture of the joint corroborated the findings.

Other *intercellular* organisms such as trypanosomes, the spirillum of relapsing fever and filaria are easily recognized; the *intracellular* organisms, of which the malarial parasite is the one of greatest immediate interest to us, are easily recognized when seen, but it sometimes requires long and patient search to demonstrate

them; only quite recently I spent two hours' time examining two films from a case in which malaria was suggested by the clinical symptoms, before being rewarded by finding two solitary but well defined specimens of the tertian organism.

It is the interpretation of cell proliferation or degeneration that our deductive faculties will be taxed to the utmost in attaining anything near accurate results.

A film displaying a marked paucity of red cells, and these being irregular in size and shape—microcytes, macrocytes and poikilocytes—would be interpreted as being suggestive of pernicious anemia; if many nucleated reds were found, especially megaloblasts, it would be quite within the bounds of reason to suspect a malignant condition somewhere within the system of the patient.

If the cells were fairly uniform as to size and shape but showing an excavated appearance owing to loss of hemoglobin, the inference would be chlorotic anemia; here, however, it would be necessary to differentiate carefully between an artefact and a true condition, which might require a count to determine.

The problem in both these cases would be to determine whether these anemias were primary or secondary, and it is here that a thorough comparison of the most careful clinical observations with the film appearances would be so essential to a conclusive determination, and is one of the reasons why the general practitioner should do this part of his own blood work at least.

A possible leukocytosis, or the opposite, a leukopenia, may be deduced with reasonable accuracy by one who has had considerable experience in this work, but more often it is the relative proportions of these elements that is of real diagnostic moment, hence we make our interpretations from the differential count, counting at least 500 leukocytes for each estimate. A polynuclear content above 70 percent. may be considered as a relative polynuclear leukocytosis, and when approaching 90 percent. is justifiable reason for suspecting the presence of confined suppuration; many other conditions will produce a moderate leukocytosis but in the presence of clinical symptoms unaccountable excepting on the hypothesis of pus formation the above interpretation is usually confirmatory.

A mononuclear content above 30 percent. is suggestive of tuberculosis or glandular hyperplasia.

A total absence of eosinophils is suggestive of typhoid; I also find that condition in senile debility and delayed recuperation from any severe sickness, so much so that it is to me always an indication of defective restorative ability.

On the other hand a persistent eosinophil content of 4 or 5 percent. or over, in the absence of any septic infection or parasitic condition, in an ordinary neurasthenic debility, is indicative of strong recuperative powers on the part of that individual.

An eosinophil content of from 10 to 70 percent. in the presence of a vague febrile condition resembling incipient typhoid, especially when accompanied by a facial neuralgia, is almost conclusive of trichiniasis; a moderate eosinophilia occurs in true bronchial asthma, some skin diseases (pemphigus, pellagra, psoriasis, etc.), parasitism, all ovarian diseases except cancer, some malignant conditions, etc.

Basophils have little or no significance.

Myelocytes indicate a disease of the bone marrow and when present in excess constitute the fatal condition known as spleno-medullary leukemia.

In conclusion: Equipped with a moderate priced microscope and a 1/12 glycerin immersion objective, a bottle of solution of eosinate of methylene blue and a few slides, the general practitioner can make his own film examinations in a very few minutes and he will not only be surprised at the information and diagnostic light which he will obtain thereby but he will also feel more than compensated for the little extra exertion required.

THE CONSTITUTIONAL INFERIOR INDIVIDUAL AND THE PUBLIC.

C. C. ATHERTON, M. D., WATERTOWN, ILL.

Personal deviations from the regular course of mental development are considered abnormal only when they are of special consequence to the mental and physical life of the individual. This distinction is purely one of degree and is not to be confounded with eccentricities, which are often considered as being normal to the person. Eccentricities are simply an absolute predominance

of individual factors originating from structural brain anomaly, and are found associated with all grades of intelligence.

Constitutional inferiority, with which this paper has to do, is a term applied to certain forms, or more properly, certain groups of mental defectives, characterized by congenitally unstable nervous systems and particularly an unstable mental condition.

There is a large group of such morbid conditions which are considered mental deformities but which are not characterized by any definite pathological disease process, but are regarded as morbid because of a general deviation from the usual normal mental life. Defectives of this type are under sufficient control of themselves to be responsible, or partially so at least, for their acts. They are what might be considered as normal intellectually, yet are, nevertheless, deficient in that they show themselves incapable of co-ordination in their social relations with the public by which the normal person succeeds in overcoming the problems of life. There is an absence of that fineness of balance which is so manifest in the normal individual. Conditions in life, even though ordinary in character, are met only half heartedly and soon are abandoned for a less important and less strenuous occupation. There is an inability to adapt themselves to their environment. Inconstancy is the principal characteristic and it stands out so boldly that it is only too apparent even to the untrained and less scientific populace. There is a well marked feebleness of purpose, with an incapacity to initiate, decide, or inhibit. Will power, if it ever did exist, is pitifully weak.

Whether these unfortunates recognize their inferiority in comparison to the normal individual and try, in a way, to mask it, or whether their weakened will becomes exhausted, as yet remains an unanswered question. Whichever it may be, it is a fact, nevertheless, that they are indeed inferior and go a long way towards swelling the numbers in that great army of incompetent drifters of the human race—derelicts on the sea of human endeavor. Inadequacy is the keynote with them and they are totally unable to properly provide for their future. Those without a ready supply of funds and who of necessity must do something for a livelihood drift and wander from place to place, doing first one thing and

then another, but never sticking to anything for a period long enough to derive benefit, except to get enough money to meet their immediate needs. Alcoholism, drug addiction and various other vices find in them ready victims. If they belong to a higher social grade than the average, where ready money may be had for the asking and a more or less unlimited supply, their tastes are somewhat more elaborate, but just as vicious.

This group of social dandies is not exceptional and sooner or later passes on into the paths of least resistance, into inferior and only too frequently questionable surroundings, with never a thought of the possible consequences. They abandon themselves to games of chance, to dissipation, revelry and immorality. Their mental make-up is such that this sort of riotous conduct finds fertile soil in their disordered brain, and the wildness of today gives to them no warning thought for the morrow. They fail to grasp or appreciate that which should go with culture and refinement and even the ordinary principles of common decency and good breeding soon fade into the background. Their intellect is such that they should know better, but it is well demonstrated in their morbid tendencies and in their daily conduct that they are inferior.

Public and private institutions have hundreds of these people, but by far the greater number are at large mingling and associating with the general public. When one of this type who has been in an institution succeeds in getting out, either by way of being regularly paroled or having escaped, he, as a rule, returns to his home and friends and for the most part gets along as well as the average for a time, at least, and the public never hears of him. If perchance he should go wrong and gets into mischief it is bad, but if some crime is perpetrated against society the fact is heralded all over the country and the calamity howlers set up a tirade of criticism and abuse against the institution authorities for carelessness and laxity in the conduct of their charges. On the other hand, prisoners are being daily released from the penal institutions because they have served their bit and public demands have been satisfied or, in recognition of their good behavior, their sentence is cut short and they are paroled. They are presented with a small sum of money, dressed in a new suit of clothes, and sent out into the world with a hearty

handshake and the good wishes of all. They are the proven criminals, degeneracy pops out all over them, yet they are shunted out into the world and sent on their way rejoicing, ready to begin all over again. Statistics prove that by far the vast majority sooner or later, and usually sooner, fall from grace and are found in their old haunts with the same old crowd and ready to do business in the same old way. Schooled in crime and most important of all defectives, with a cunning developed to a high degree from their life of deception, they are soon haled into police circles for fresh crimes and again sent to prison. Whether their crime was serious or not, it is only too frequently minimized and the fact that they are crafty, degenerate, dangerous beings seemingly makes but little difference, for when their time is up they are again allowed their freedom, by law, to go where they please and again try it all over.

The open door policy of these United States permits defectives to enter this country without much difficulty. The so-called literacy test, a bill to legalize the same having been introduced in the recent congress and which met with terrific opposition, would not by any manner of means correct the evil. The higher the education the more dangerous the defective. A sound mind and a healthy body are worth more to this country than an educated degenerate who can read and write and whose knowledge only serves to make him a cunning, lawless and slippery citizen, whose activities are principally limited to evading the law.

It is useless to further consider this phase of the subject other than to say we know beyond a question that these people exist, we know their peculiarities and their weaknesses and can describe them, and we further know that they are not normal and never will be. The vital question is, what are we going to do about it?

Newspapers, magazines and various other publications have taken up the subject and are devoting considerable space to it. Some of the articles are excellent, while others are not. For example, one occasionally sees in print where a defective child has been made normal by a simple operation on the eyes, a straightening of the same, or perhaps a correction of vision. This is purely a circumstance in the child, which may have made it so difficult for him to see that it was im-

possible for him to keep up with his class, and, as a result, fell behind in his studies. Defective vision and defective mental development are two distinctly and vastly different things and no operation on the eyes, regardless of its character, is going to put a new set of brains into any one's skull.

The eugenic proposition is another plan which was launched forth by many enthusiasts and which was supposed to do wonders, but for many reasons has not lived up to its reputation. It is quite likely that it would help some if it could be properly carried out, but unfortunately it is one of those near laws which cannot be enforced. The clean bill of health marriage certificate is fine so far as it goes, but it, too, has its limitations. It no doubt could stop diseased people from marrying, but how on earth could it prevent any of the type considered in this paper from doing so, providing their physical state was such as to pass inspection. It is a moral certainty that they would present themselves for examination all primed and ready for the examiner.

Sterilization of the unfit is another means which has been recommended and some states have laws in their statutes authorizing that this be done. This method would, to a slight extent, decrease procreation, but in my opinion would, to a very large degree, increase sexual disease.

To remove the conceptive elements of a defective woman and then allow her to roam at large would be almost criminal and certainly disastrous. Caution would become a thing of the past and her amorous nature would, in spite of all, assert itself. Men would continue to use her for evil purposes and as a carrier of venereal disease, syphilis, gonorrhea, and numerous others of a like nature, she would be the medium par excellence.

At a recent medical meeting held in this city a paper on this subject was read and I take the liberty to offer you a part of the same. "It is against the law to disseminate knowledge that may lead to birth control and yet we see everywhere about us insanity, imbecility, criminality, truancy and every degree of parasiticism and chronic invalidism"—"Birth control is of paramount importance in handling the tremendous social questions of the day."—"The stifling fumes

of our morally decomposing masses threaten our good homes and our nation," etc.

Considerably more than the above appeared in at least one of our most prominent dailies. The public, of course, reads, and knowing but the one side of the question, thinks it is a good thing, but is it? Would the sterilization of the unfit as a general measure do all that is claimed for it? Personally, I am of the opinion that it would not. Individuals who are subjects for an operation of this character must of a necessity be subjects for further care and observation, and as such, there is only one way to properly provide for them, and that is to place them in an institution and keep them there with such laws as would make this possible. No doubt this would be somewhat expensive in the beginning, but would be cheapest in the end. Notwithstanding all that has been said and done on the subject of defective mental development and its relation to the public, the issue remains a most vital one and is of paramount importance to all.

A SUBMERGING IN ASPHALT AT A TEMPERATURE OF 360° F., WITH RECOVERY.

O. F. SCOTT, B. Sc., M. D.,
Chief Surgeon, Argo General Hospital.
ARGO, ILL.

Patient, male, aged 21 years, was admitted to my service on April 7, 1914, because of a fall into a tank of asphalt in which the thermometer, at the time, and additional thermometers later, showed the temperature to have been 360° F.

Examination showed the patient to be completely covered with a thick layer of asphalt from the top of his head to the soles of his feet. The mouth and external nares were almost totally occluded. This asphalt was quickly detached in order to prevent asphyxiation. The asphalt, from the remainder of the exposed parts, was removed with extreme difficulty and showed first and second degree burns. There was a burn of the entire corneal surface of the left eye, on account of its having been open when the patient fell into the tank; the external auditory canals were also filled with asphalt. The clothes, upon being cut from the body could be made to stand like a suit of armor.

Under treatment the patient pursued an un-

eventful recovery as far as life was concerned.

Complications and Sequelae—The burns of the external portions of the anatomy cleared up without appreciable scars; the corneal burn without any defect of sight. The asphalt penetrating the left external auditory meatus, however, produced a severe purulent otitis media, which induced a perforation of the tympanic membrane. The otitis media persisted for three months. The perforation closed, after cauterizations, in four months with return of hearing. During the first few weeks, after the beginning of this purulent inflammation, a most peculiar swelling, or enlargement, of the peri-auricular tissues occurred so that the ear resembled the so-called "cauliflower" type. This enlargement disappeared during the course of three weeks, leaving only a slight permanent infiltration.

This case is only of interest in demonstrating the extreme temperature to which the body can be exposed with practically no permanent defects subsequently and without loss of life. The viscosity of the media is absolutely, in my opinion, the only factor that prevented fatal burns. Because, before the asphalt had time to penetrate the wearing apparel the patient was able to clamber up the side of the tank and the air striking the asphalt it ceased immediately to penetrate and congealed before body burns on the unexposed parts were sustained. Four months after the injury the patient was able to return to his former occupation.

It would be interesting to know just how many people in Chicago have learned that consumption, if taken in the early stages, is curable.

Plants will not grow and thrive in dark, ill-ventilated basements. Neither will human beings. Both need plenty of air and sunshine.

In paddling your own canoe toward the Harbor of Health, rocks are not the only things to avoid. Do not run into the other fellow's boat.

A tooth brush at home, one at the office, and another in a neat case for your best pocket are none too many.

It may take more than one swallow to make a summer, but only half a swallow of dirty milk can make a summer complaint.

—From *Bulletin, Chicago Department of Health.*

Dirty air is death.

* * *

Good air means good work.

* * *

Too much fresh air is just enough.

ILLINOIS MEDICAL JOURNAL

Published monthly by The Illinois State Medical Society, under the direction of the Publication Committee of the Council.

GENERAL OFFICERS 1914-15

PRESIDENT.....CHARLES W. LILLIE, East St. Louis
 PRESIDENT-ELECT.....WILLIAM L. NOBLE, Chicago
 FIRST VICE-PRESIDENT.....F. S. O'HARA, Springfield
 SECOND VICE-PRESIDENT.....H. P. BEIRNE, Quincy
 TREASURER.....A. J. MARKLEY, Belvidere
 SECRETARY.....W. H. GILMORE, Mt. Vernon
 (Ex-officio Clerk of the Council)

THE COUNCIL

District 1—EMIL WINDMUELLER, Woodstock.
 District 2—EDWIN S. GILLESPIE, Wenona.
 District 3—CLYDE D. PENCE, Chicago.
 District 4—AUGUST H. ARP, Moline.
 District 5—C. S. NELSON, Springfield.
 District 6—C. D. CENTER, Quincy.
 District 7—C. F. BURKHARDT, Effingham.
 District 8—E. B. COOLEY, Danville.
 District 9—FRANK C. SISLEY, Carmi.
 CLYDE D. PENCE, *Chairman*, 3338 Ogden Avenue.

Send original articles and all communications relating to advertisements and mailing list to Dr. Clyde D. Pence, Editor, 3338 Ogden Avenue.

Membership correspondence to Dr. W. H. Gilmore, Mt. Vernon, Ill.

Society proceedings and news items to Dr. Henry G. Ohls, *Managing Editor*, 927 Lawrence Avenue, Chicago.

Contributors will submit all copy for publication typewritten on standard size paper and double spaced. Copy not complying with this rule will be returned, if convenient.

NOVEMBER, 1915

Editorials

THE PATIENT'S STANDPOINT.

THE ILLINOIS MEDICAL JOURNAL does not often publish a paper written by a layman, although we frequently are importuned to do so. In this number, however, appears an article from Mrs. Sibyl Morris Teague, entitled "The Best Tuberculosis Prevention from a Patient's Standpoint," read before the Mississippi Valley Tuberculosis Conference, which we think should be published, not in a newspaper, but in a medical journal.

We do not agree with everything Mrs. Teague says, but she has spoken so truly on many points that every physician in Illinois should read what she, as a patient, has to say, and they should not only read, but they should also think of their patients having "Walking Typhoid," "Pleurisy," "Frequent Protracted Colds," "Bronchitis," etc., and determine accurately just how many of these patients have an incipient tuberculosis, or, possibly, a more advanced stage.

Far too many patients, suffering from tuberculosis, reach the second and even the third

stage of the disease without a diagnosis of such condition, and it is not the fault of the patient either. Your patient has the right to your best diagnostic ability, and indeed has a much greater grievance, if you do not give it, than Mrs. Teague has placed against you.

HOSPITAL CONTROL AND EFFICIENCY.

The object of hospitals is primarily to care for sick people, and the efficiency of the hospital depends much on its ability to care for sick people in a manner satisfactory to those being cared for.

That hospitals are becoming more popular with the masses of the people there can be no doubt. Equally true is it that still more of the sick should be cared for in hospitals than is being done at the present time. It is undoubtedly true that a patient receiving the individual care which his case demands can be taken care of more comfortably and with far greater safety in a hospital than in his home.

In a large city, where the greater number of the people are not wealthy, the first question frequently put to the doctor, when he advises hospital care, is concerning the expense of hospital accommodations. Too frequently they do not take into consideration the doctor's fees. Hospital fees are payable in advance.

The second question put to the doctor is not concerning his charges, but can he attend the patient in some particular hospital. This is because of certain conveniences to other members of the family—possibly because the patient simply has a preference, or, as frequently happens, because of certain sectarian control of the particular institution. This question too frequently places the doctor in an embarrassing position. He wishes to please the family so far as he may, and at the same time secure for the patient the most satisfactory arrangements.

If the preferred hospital is one of the large institutions, run principally under the direction of and for the especial benefit of a certain few men who are on that particular staff, the family doctor, who may not be known at that institution, will be placed at a disadvantage. In a very short time the patient knows that the doctor is not a regular attendant there; in fact, is not known, and that a certain specialist of that staff is very successful. This too frequently breeds dis-

content in the mind of the patient or his relatives, particularly if the patient is not progressing toward recovery at a rapid rate. There is, perhaps, a natural feeling of loyalty in every nurse and intern of an institution for its staff members, but this, in many hospitals, is carried to an extreme, particularly in the large institutions.

Some institutions, where such treatment is accorded the family doctor, or the doctor who visits there infrequently, has not attained its maximum efficiency—no difference how high are its standards nor how good is its laboratory or other equipment. The hospital has not attained 100 per cent efficiency until each and every patient may be treated by the physician of his choice and may receive the same consideration shown to patients of staff members. The hospital has not attained its highest level until all patients receive individual care and attention, as against a routine procedure—as, for instance, it may be advisable to take the temperature of some patients at 4 or 5 or 6 o'clock in the morning, but certainly it is neither necessary nor advisable to awaken most patients, who possibly may have had a bad night, in order to record a temperature at that early hour.

In certain institutions much of the daily work is done in this routine manner—rather to accommodate the convenience of the attendants, not for the welfare of the patient. Routine practice in hospitals is no better than the empirical therapeutic methods of our predecessors of a century or so ago, and should be condemned.

Another practice which is to be regretted, and one which obtains to a greater degree in large institutions, is that of having much of the work done by interns. People employ a physician in whom they place confidence, and it is his duty to give his best service. Too frequently the busy surgeon operates and does not see the patient again, or, if he does, takes little or no interest in the subsequent dressings or management. Frequently a patient's well-being depends as much on after care as upon surgical procedure. In many instances the work which the physician delegates to the intern is in turn delegated to a nurse by the intern. This is not the service the patient is paying for, and the hospital is not giving a maximum service when these things are done. To say the least, the hospital patient is

deserving of as much individual attention from his physician as he would have were he at home.

ACTIONS FOR CIVIL MALPRACTICE.

Fourteenth Article.

ROBERT J. FOLONIE, LL. B.
CHICAGO.

The majority of suits for claimed malpractice are baseless in both law and fact. The greater number of them are abandoned before trial. How baseless they often are, may be illustrated by the case of Dr. M. The patient had a tubercular infection of the spinal column. She was attended at a clinic in which Dr. M. was prominent. A plaster cast was placed upon her and left for a considerable time. According to the claims of plaintiff this cast pressed upon the nerves supplying the uterus, which caused it to become diseased and rendered her sterile and incapable of performing marital duties. For this reason she was deserted by her husband and left destitute and deprived of her support as well as of important bodily functions.

The case was delayed for a considerable period and during the interval patient and her husband were divorced. She re-married and gave birth to a child. Upon discovery of these facts the case was promptly abandoned.

Dr. M., who was subjected to this suit never saw the patient or attended her in any way. She was, in fact, given attention by another physician and the reason for suing Dr. M. was because he wore a beard, and the physician who attended her in the clinic also wore a beard, which was proof conclusive to plaintiff's lawyer that he was suing the proper party, a beard serving as a badge of identification.

No moral is sought to be drawn from the fact that Dr. M. was adorned with a beard—but the situation illustrates upon what utterly foundless claims many actions of this character are brought.

I feel that I would not be performing my full duty to the profession, if I did not call attention incidentally to the fact that many actions of the kind under consideration are the result of incompetent attendance and treatment by midwives.

Subsequent treatment by the physician resulting in a failure of cure has the not infrequent consequence that the entire ill-effects, real and imaginary, are laid at the door of the physician.

This is due to a very common conception, particularly among the foreign-born, that in her sphere the midwife is the superior of the physician. This feeling is so strong that even were it possible, it is entirely impractical to attempt to eliminate the midwife.

I am strongly impressed that a correction of this condition must rest in a legislative supervision of the right of midwives to attend confinement cases and that training schools and examinations of their qualifications be installed in connection with training schools for nurses.

I am impressed that this branch of the activities of the profession has been neglected and that the discouragement of the employment of midwives is on the whole inadvisable.

FIRST AID STANDARDIZATION.

A movement is on foot and a board has been appointed to study first aid problems, with the object of standardizing the methods, material and equipment employed in the administration of first aid to those injured in the pursuit of industrial occupations and in war.

The problems of first aid to the injured are large ones, and when methods and equipment are perfected, or at least have reached a reasonable degree of efficiency, many lives will be saved that are now sacrificed because of inability to properly give the aid needed at once.

The names of Surg. Gen. Wm. C. Gorgas, as chairman, and Dr. Jos. C. Bloodgood, Baltimore, as secretary, are guarantee that this board will study the entire question from all angles, and that its report will be of inestimable value.

The Secretary, Dr. Bloodgood, wishes it stated that he will welcome answers to the following questions from any surgeons of experience in the treatment of accidental injuries, and that these questions will receive the deliberations of the Board on First Aid Standardization:

FIRST MEETING, WASHINGTON, D. C., AUGUST 23 AND 24, 1915.

The following resolution was passed at this meeting: That the questions noted below be sent to the Chief Surgeons of Railroads, Mines and Manufactories, first, to be answered by them; second, that a copy of these questions be sent by the Chief Surgeons to their Associate Surgeons.

The object of these questions is to attempt to get the opinion and experience of a number of surgeons and to formulate them for publication.

Please answer each question on a separate sheet of paper and sign your name to each sheet:

1. What has been your experience with the most available first-aid package and dressing for small and large wounds?

2. What has been your experience with the immediate employment of antiseptics in accidental wounds; what antiseptic have you used, in what strength, and how applied? Have you employed tincture of iodine; if so, how and what have been the results?

3. What in your experience has been the most efficient and most readily applied method of fixation for injuries of the (a) upper and (b) the lower extremity?

4. Have you considered the construction of a stretcher, which, in addition to serving as a means of transportation of injured, will have appliances for the fixation of the upper and lower extremity, somewhat along the lines of a Bradford splint, or the Gihon naval splint?

5. Please state your views on some liquid ointment dressing which would be available for first aid in large wounds and burns with the object of preventing the usual dry-gauze dressing adhering to the wound and rendering subsequent dressings painless.

These questions have been sent to all the members of the Association of Railroad Chief Surgeons of America, and a few other Civil and Military Surgeons.

Please give these questions your personal attention, first, and mail your answers to the Secretary, at the same time writing him and giving him the number of copies of these question sheets desired to mail to your Associate Surgeons.

Very sincerely yours,

JOSEPH C. BLOODGOOD, Secretary,
904 N. Charles St., Baltimore, Md.

RESOLUTION ADOPTED BY THE AMERICAN FIRST AID CONFERENCE.

Washington, D. C., August 24, 1915.

Your Resolution Committee has the honor to report that it has carefully considered the resolution which was committed to it and has redrafted it as follows:

Whereas, There is a great lack of uniformity in first aid methods; in first aid packages, and in other first aid equipment; and in first aid instruction, and

Whereas, Many of the aims of first aid are defeated thereby and needless suffering and expense incurred, Therefore, be it

Resolved, That this Conference recommends to the President of the United States that he appoint a "Board on First Aid Standardization," said Board to consist of one officer each from the Medical Corps of the U. S. Army, the Medical Corps of the U. S. Navy, the U. S. Public Health Service, the American National Red Cross, the American Medical Association, the American Surgical Association and the Association of Railway Chief Surgeons of America; this Board to deliberate carefully on first aid methods, packages, equipment and instruction and to recommend a standard for each to a subsequent session of

this Conference to be called by the Permanent Chairman; the creation and maintenance of the said Board to be without expense to the United States.

Your Committee further reports that it has personally consulted the Assistant Solicitor of the Treasury and he has given the opinion that there is no legal objection to the resolution or its purpose.

The Committee has also personally consulted the Secretary to the President and he has assured your Committee that it is his personal opinion that the President will take favorable action in the premises.

Committee on Resolutions:

W. C. RUCKER, Asst. Surg. Gen. U. S. P. H. S.
 MAJOR ROBERT U. PATTERSON, M. C. U. S. A.
 Representing the Amer. Nat'l Red Cross.
 W. L. ESTES, Chairman Comm. on Fractures,
 Amer. Surg. Ass.

DISGRACEFUL TREATMENT OF CHICAGO DOCTOR BY POLICE.

Dr. J. V. Fowler, addressing the Council of the Chicago Medical Society:

You may have read in the newspapers a few days ago of a doctor having been arrested for violation of the Drug Act. I would like to state what I know about the case. The doctor was visited first of all by a patient who was a drug fiend, and who was suffering from the effects of the withdrawal of the drug. The doctor was urged to take the case. At first he refused and tried to get the man to go to some institution. The man made excuses that he couldn't go at the present time, and wouldn't go to the County Hospital, but stated if he could only get on his feet for a while he could earn enough money to take the treatment. The doctor gave him some morphine, which he recorded. The man came the second time and this time the doctor cut down the amount of the drug so that he had a smaller amount to last a greater length of time. Later on, possibly a week, a lady appeared representing herself as the patient's wife and stated that he was very much better and had almost dispensed with the use of the drug. She described the man, told his address, etc., and so the doctor gave her a small bottle of a weak solution of codein, but told her not to let her husband know it was a weaker solution, and told her not to come again, as he would not give her any more, stating that her husband must come. She came again about a week afterwards, stating that her husband could not come, and he gave her still another weaker solution. In a few minutes in appeared a couple of detectives and locked him up. His wife telephoned me. I found he was booked for 9:00 o'clock the next morning. I immediately got busy and did everything I could to get him out of jail, but all to no purpose. When the case came up he was discharged. A reputable man was thrown into prison without any charge for any crime; no friends could see him or learn anything about it except that he was locked up. He was held in jail over night; and the papers published it broadcast. His reputation is af-

fectured to such an extent that possibly he will never live it down, and all for what? Nothing. It is time we are putting our shoulder to the wheel and stopping such persecutions. We are in sympathy with the purport of the law and we are all anxious to catch the violators of the law, but to throw a man into prison on suspicion alone is not a thing that should be allowed to exist. I hope this council will take action on the matter when it comes up for action.

Dr. J. C. Krafft read the following resolution:

WHEREAS, Chicago Medical Society is composed of doctors of approved reputation and medical standing in the city of Chicago; and

WHEREAS, This organization is in full accord and sympathy with the so-called Harrison Drug Act and in the enforcement of the same; and

WHEREAS, One of the members of this organization, a physician of the highest professional attainment and of unsullied personal and professional reputation, was arrested at 7:00 o'clock one evening for an alleged violation of said law and was taken from his home and locked up in a cell in a police station in the city of Chicago, without being charged with any offense or booked for the violation of any law and was not given any opportunity to furnish bail until the following day, and was compelled to remain all night in prison without being given the privilege of communicating with his friends, and his whereabouts being unknown to his family; and

WHEREAS, At the hearing before the United States Commissioner, upon a statement of the facts concerning which he was arrested, he was exonerated and discharged from any violation of law; and

WHEREAS, The fact of his arrest was heralded in the public press of the city of Chicago, prior to the time that he was given an opportunity of offering bail, thereby doing him an irreparable injury, both socially and professionally, and from which he had no recourse in law; and

WHEREAS, Such like treatment is liable to be visited upon any physician, however reputable, practicing medicine in the city of Chicago, when the instrumentalities employed, such as stool pigeons, are used for the purpose of entrapment into apparent technical violation of law, from the standpoint of his traducers, when, as a matter of fact, he may be within his legal rights as a physician under the law and be subjected to arrest and incarceration in a police station during the night, without any opportunity of giving bail, the purpose and intent of such arrest being to humiliate and degrade him in the eyes of the public, both socially and professionally, rather than the honest enforcement of the so-called Harrison Drug Act.

WHEREAS, This Society believe that those instrumentalities of government, whose duty it is to see to the enforcement of this law, are not in sympathy with the methods employed as hereinbefore stated if their attention were called by this organization specifically to the same and would not lend their aid in humiliating, disgracing and injuring the professional standing of any reputable physician in the city of Chicago.

Now, therefore, be it

Resolved, by the Council of the Chicago Medical Society, in council assembled, that a request be made upon the Honorable Charles F. Clyne, United States District Attorney, and also upon the Honorable Charles C. Healey, Superintendent of Police of the city of Chicago, to instruct those officers to whom the assignment is made in connection with the enforcement of the Harrison Drug Act, not to serve warrants sworn out against members of the medical profession, except between the hours of 9:00 o'clock a. m. and 4:00 o'clock p. m., when courts are in session, so as to give an opportunity for the furnishing of bail, thus removing the menace that any reputable physician shall be subjected to, the degradation and disgrace of passing a night locked up in a cell with thieves and felons; Be it further

Resolved, That a copy of this resolution be transmitted to the United States District Attorney and to the Superintendent of Police of the city of Chicago and be given publicity in the medical journals of this association; and, Be it further

Resolved, That the members of this association cooperate with and use their best endeavors in assisting the government officers in the enforcement of the Harrison Drug Law against anyone of the profession who knowingly and wilfully violates the same.

The resolution was discussed further by Drs. Earle, Brown, Hoag and Hemenway, and on vote, unanimously adopted.

TUBERCULOSIS NOTES.

The symptoms in tuberculosis can be classified into three groups, each group depending upon a certain cause.—(Pottinger.)

Group 1—Due to the tubercle toxin:

- Malaise.
- Feeling of being run down.
- Lack of endurance.
- Nervous instability
- Indigestion.
- Loss of weight.
- Increased pulse rate.
- Night sweats.
- Temperature.
- Anaemia.

Group 2—Due to reflex action:

- Hoarseness.
- Tickling in larynx.
- Cough.
- Loss of weight.
- Increased pulse rate.
- Chest and shoulder pains.
- Flushing of face.
- Apparent anaemia.

Group 3—Due to tuberculosis involvement per se:

- Frequent and protracted cough.
- Spitting of blood.
- Pleurisy.
- Sputum.
- Temperature.

It would be interesting to know how many people believe tuberculosis curable, after all the extensive publicity given this fact.

If the diaphragmic excursion of right side equals that of left side or is less, it denotes some lesion in right side of chest, as a general rule.

The diaphragm movements should be carefully studied. A change in movement denotes trouble in chest, not necessarily tuberculosis.

The best place to look for incipient tuberculosis is in the posterior supra-clavicular areas. Lesions below the clavicular areas. Lesions below the clavicle have passed the incipient period.

Making a diagnosis purely by the use of the skin test is to be deplored.

Hypodermic injections of pituitrin have acted very well in stopping pulmonary hemorrhage.

Page (Journal Iowa State Medical Society, Vol. V. No. 10) gives following conclusions on pregnancy and tuberculosis:

1. Pregnancy, birth and childbed exert a distinctly deleterious effect on actively tuberculous women.
2. This bad influence is best controverted by early termination of the pregnancy and giving subsequent anti-tuberculous treatment.
3. Interference of pregnancy after the fifth month in the absence of special indication, is of little value.
4. The tuberculous mother should not nurse her child.

The November number of the "Madison County Doctor," edited by Dr. E. W. Fiegenbaum, is devoted to the discussion of tuberculosis, or rather to the prevention of tuberculosis. It is so written and illustrated with photographs that no layman who reads it should fail to see the argument.

We wish this little journal might find its way into every home in Illinois. It would do more good in the way of educating the people to the dangers of tuberculosis infection than could be estimated.

Correspondence

MEDICO-LEGAL.

Chicago, Ill., Oct. 11, 1915.

To the EDITOR: I beg to call the attention of the profession to an act of the legislature of Illinois, which might escape notice as it is an amendment of the Pharmacy Act of Illinois. The act is senate bill No. 300 and is now in force in this state. It follows in general the Federal Anti-Narcotic Act. The records required by the Federal Act being adopted as a compliance with the

state act—among other provisions prohibit any licensed physician from furnishing or prescribing the narcotics in question for the use of any habitual user except only when prescription is for patient being treated for the drug habit. Such prescriptions when given must be in good faith and not for the purpose of evading the act. Fines for violation of the act are severe.

Attention is also called to the amendment of the act relating to the practice of medicine, which is amended to give power to the state board of health to revoke certificate to practice medicine after hearing, even in case of certificate issued under former acts respecting the license of physicians.

Another new act of the legislature is the act to regulate practice of optometry. Licensed physicians are exempted from the operation of the act which vests power respecting examinations, admissions to practice, etc., in state board of optometry.

Yours respectfully,

ROBERT J. FOLONIE.

OPTOMETRY LEGISLATIVE VOTE IN ILLINOIS

For the past few years there has been an ever-increasing feeling that we are suffering from over-legislation and are the victims of the vicious tendency on the part of present day legislators to correct everything by statute, even where it can affect but a small group of persons and regardless of the effect upon the rest of the community. This principle has become notorious in Illinois.

Private individuals or groups of individuals cannot maintain an expensive "press and publicity" staff of lobbyists while the laws are being made; the only ones who can benefit by this system are the powerful corporations, cults and sects who receive and set aside each year thousands of dollars for this purpose. In the past the doctors have been satisfied to trust themselves to the common sense of the representatives in the state Capitol. However, we have arrived at a point where we can see that this method is no longer to be relied upon.

The latter feature was well illustrated at the last session of the Illinois legislature, when quite a percentage of the members of that body, in voting for the notorious optometry bill, violated their written or verbal pledge made to their respective county medical societies. The pledge being to the effect that if elected they would vote to maintain one standard for admission to the practice of medicine. In addition to violating the pledge mentioned, these same legislators, legalized to practice medicine, a class of practitioners totally unfitted to undertake the work, and for this the people will have to pay

the penalty, even to the dimness of their vision, as well as in actual loss of life.

The violation of pledges on the part of legislators was not the only remarkable feature; there should be noted the persistence with which the supporters of the bill worked. Note, too, that much of the noise and agitation throughout the legislative session in behalf of the bill was made by persons residing outside the state of Illinois, not voters of this great commonwealth.

There are 12,000 legalized practitioners in Illinois and in contrast to this there are only a few hundred optometrists. It is difficult to imagine a legislator violating an anti-election pledge made to his physician constituents without some extraordinary influence being brought to bear. In the absence of some specific inducement, surely it could not be construed as a wise political move.

The optometrists had been before several previous legislatures and expended money without stint. We are informed (we do not know how truthfully) that a hundred and twenty thousand dollars (\$120,000.00) was spent in the last legislature in obtaining the passage of this bill. Its supporters, in great numbers, were in Springfield lobbying during the entire legislative session. Members of the committee before whom the bill was pending, as well as members of delegations appearing in Springfield to oppose the bill were watched constantly. Indeed the spy system used by the proponents of this measure would do credit to any of the warring nations of Europe.

So confident of its ultimate success were its sponsors that long before its passage in the House they were bold enough to try and devise a means of completely emasculating the entire medical practice act. This, they hoped to accomplish, by writing into the optometry bill a few words so cunningly constructed that the real meaning would escape detection. Imagine the lives of the people of Illinois being jeopardized by turning loose to prey upon the people every form of quackery imaginable, which this attempted legislation would have brought about. The scheme failed, we are reliably informed, because of lack of a brain ingenious enough to contrive the necessary wording.

Legislation, which requires for its passage the maintenance of a large lobby, and an elaborate spy system, together with the expenditure of enormous sums of money, is vicious on its face and should be defeated.

Note the hypocrisy and inconsistency on the part of one member of the legislature and it will illustrate the depths to which members went in violating their ante-election pledges. The preceding general assembly created a committee on "Efficiency and Economy," of which Senator Manny (30th District) was chairman. Its function was to devise ways and means to bring about a concentration of administrative boards and to prevent the creation of new boards. The chairman of this committee was active at all board

meetings and signed a recommendation placing all departments of state government under twelve major heads. In conformity with the recommendations of this committee on "Efficiency and Economy," there was introduced into the last session of the legislature a number of bills purporting to bring about the results mentioned. They were known as "Efficiency and Economy" bills.

In this scheme all health matters were to be in the Department of Health. To bring about that ideal condition, Senate Bill No. 240 (one of the "Efficiency and Economy" bills) was introduced into the legislature. Note that on roll call on the optometry bill, Senator Manny, chairman of the committee on efficiency and economy, voted aye. A more brazen piece of inconsistency and hypocrisy would be hard to find. "Consistency, thou art a jewel."

Not content with hypnotizing members of the House and Senate, this optometrists' lobby brought its peculiar influence to bear on lay employees about the state Capitol. Laymen about the executive offices in the state service who could not tell the difference between an optometrist and a buffalo were propounding the virtues of this bill (of which they knew nothing) too; for some unexplained reason the lay friends of the governor were molded into the booster campaign in its behalf.

Follow this influence a step further. The bill came before the governor for approval or veto. Optometrists, two hundred strong, headed by the national organization, in the person of a high salaried man (from New York), appeared before his honor to tell of the virtues of optometry. In the first place, the governor, in considering bills for approval or veto, should not have permitted non-residents to appear either for or against any measure affecting the interests of the people of Illinois. Is not the body politic of Illinois able to manage its own affairs? The pernicious meddling of the optical trust, this outside hired help of the National Association of Optometrists, should have been resented by the governor, as well as the legislature, and should not have been tolerated for one moment.

At the hearing, above mentioned, there appeared against the bill a delegation of eighteen physicians representing the Illinois State Medical and the Chicago Medical Societies. The reason for this small representation is that these great organizations continue, as in the past, to trust themselves to the common sense of the representatives of the state government.

After the pros and cons of the bill were presented his Honor remarked privately to a member of the committee, "You fellows have to do something to overcome this demonstration," and a few minutes later to a member of the same committee he remarked, "Leaving aside the merits of this bill, for political reasons I have to sign it." Using the term "political reasons," in its broadest interpretation, can one imagine by any line of common sense

reasoning what would prompt a man to sign such a measure to satisfy at most a few hundred non-residents of Illinois as against the wishes of 12,000 legitimate medical licensees?

Every person in Illinois is, from time to time, attended professionally by a licensed physician. The 12,000 licensed physicians, if aroused to a spirit of resentment, can influence or control each, in votes, from fifty to two hundred and fifty. This being true, imagine if you can, a more asinine statement then that it is good politics to sign, for political reasons, such a notorious bill.

Let us hope that the physicians of this state will, at the opportune time, show a proper resentment to this expression of the low esteem in which the profession of Illinois is held by our legislative and executive departments.

The *Lancet Clinic*, in a recent issue, says: "We should have at least as many physicians as lawyers in Congress." Whether this is the right percentage or not is immaterial, but it is a fact that medicine should be better represented, numerically, in our legislative halls.

The county medical societies in their respective senatorial districts should see that at least one physician is nominated for both the House and Senate at the next primary, and having succeeded in nominating at the primary, the medical profession in the respective districts, regardless of party politics, should put its shoulder to the wheel and guarantee his election. In this way only can the profession be placed in the light it is justly entitled to as a civic factor.

Doctors should take more interest in government. Instead of depending upon someone else to look after his welfare, the physician should appear personally before legislative and executive branches of government.

When you allow professional politicians to make your laws, when you are too busy to go to the primaries, you ought not to complain if the right officials are not nominated and the right laws are not enacted.

It is through the efforts of physicians themselves that requirements for medical licenses have been raised and despite the fact that it is exceedingly hard to practice medicine, but exceedingly easy to practice unhindered most any "ism," none the less whenever laws are passed regulating the licenses of physicians they are considered of peculiar benefit to the physicians rather than to the public.

The public should clearly understand that laws restricting the practice of those having certain qualifications are laws for the benefit of the public.

The fundamentality of every "ism" for which legislation is being sought are a part of the teaching of all first class medical schools and they require no separate board of examiners or a separate Board of Health to regulate their application.

Below appear the names of senators and representatives in the 49th General Assembly of Illi-

nois, together with their addresses and the boundaries of their respective senatorial districts, as well as an indication of the way they voted on House Bill No. 9, same being the notorious optometry bill.

F after the legislator's office designation (that is senator, representative, etc.,) denotes voting for the notorious optometry bill; an A in a corresponding position denotes that the legislator voted against the bill. When the space designated is blank, it denotes that the legislator was absent or did not vote on roll call.

FIRST DISTRICT

The First and Second Wards in the City of Chicago.
Geo. F. Harding, Jr., Sen.; Cook county; 2536 Indiana Ave.

John Griffin, Rep. (F); Cook county; 2020 Indiana Ave.

Wm. M. Brinkman, Rep. (F); Cook county; 3119 Indiana Ave.

Sheadrick B. Turner, Rep. (F); Cook county; 21 East Twenty-eighth St.

SECOND DISTRICT

The Twentieth Ward and Parts of the Eleventh and Twelfth Wards in the City of Chicago.

Francis A. Hurley, Sen. (F); Cook county; 1015 Cypress St.

Geo. U. Lipshulch, Rep. (A); Cook county; 920 South Ashland Boul.

Frank Ryan, Rep. (F); Cook county; 2139 West Thirteenth St.

John J. Gardner, Rep. (F); Cook county; 1523 West 13th St.

THIRD DISTRICT

The Third Ward and parts of the Fourth, Fifth and Sixth Wards in the City of Chicago.

Samuel A. Ettelson, Sen., Cook county; 3315 Calumet.

John P. Walsh, Rep. (F); Cook county; 701 West Thirty-first.

Edw. M. Santry, Rep. (F); Cook county; 116 East Thirty-sixth Place.

Robt. R. Jackson, Rep. (F); Cook county; 435 East Thirty-seventh.

FOURTH DISTRICT

The Twenty-ninth and Thirtieth Wards and part of the Thirty-first Ward in the City of Chicago.

Al. F. Gorman, Sen. (F); Cook county; 5436 Morgan St.

Geo. C. Hilton, Rep. (F); Cook county; 5440 Winchester.

Hubert Kilens, Rep. (F); Cook county; 5026 South Ashland.

Thos. A. Boyer, Rep. (F); Cook county; 4458 Emerald Ave.

FIFTH DISTRICT

Parts of the Sixth and Seventh Wards in the City of Chicago.

Morton D. Hull, Sen. (A); Cook county; 4855 Woodlawn Ave.

Michael L. Igoue, Rep. (F); Cook county; 5429 Greenwood.

Isaac S. Rothschild, Rep. (A); Cook county; 4715 Michigan.

John H. Helwig, Rep. (F); Cook county; 6931 Vernon Ave.

SIXTH DISTRICT

The Twenty-fourth and Twenty-sixth Wards and parts of the Twenty-third and Twenty-fifth Wards in the City of Chicago, and parts of the

Towns of Evanston, Niles and New Trier, all in Cook County.

Geo. W. Harris, Sen. (F); Cook county; 1963 Montrose Ave.

Joseph A. Weber, Rep. (F); Cook county; 3134 North Robey St.

Robert E. Wilson, Rep. (F); Cook county; 4025 Greenvview Ave.

Wm. M. Brown, Rep. (F); Cook county; 2161 Eastwood Ave.

SEVENTH DISTRICT

The Towns of Thornton, Bloom, Rich, Bremen, Orland, Lemont, Palos, Worth, Lyons, Stickney, Proviso, Leyden, Elk Grove, Schaumburg, Hanover, Barrington, Palatine, Wheeling, Northfield, and parts of the Towns of New Trier, Niles, Norwood Park and Maine, all in the County of Cook.

Frederick B. Roos, Sen. (F); Cook county; 512 Marengo Ave., Forest Park.

J. J. O'Rourke, Rep., Cook county; 15534 Vine Ave., Harvey.

Louis J. Pierson, Rep., Cook county; 730 Lake Ave., Wilmette.

Frederic R. De Young, Rep., Cook county; 50 155th St., Harvey.

EIGHTH DISTRICT

The Counties of Boone, Lake and McHenry.

Albert J. Olson, Sen., McHenry county; Woodstock.

Thomas E. Graham, Rep. (F); Lake county; Ingleside.

Edward D. Shurtleff, Rep. (F); McHenry county; Marengo.

James H. Vickers, Rep. (A); McHenry county; Harvard.

NINTH DISTRICT

Parts of the Fourth, Fifth and Twelfth Wards in City of Chicago.

Patrick J. Carroll, Sen. (F); Cook county; 3533 S. Hermitage Ave.

Robert J. Mulcahy, Rep. (F); Cook county; 3243 Archer Ave.

Joseph Placek, Rep. (F); Cook county; 2333 South Kedzie Ave.

David E. Shanahan, Rep., Cook county; 115 South Dearborn St.

TENTH DISTRICT

The Counties of Ogle and Winnebago.

Henry Andrus, Sen. (F); Winnebago county; Rockford.

H. S. Hicks, Rep., Winnebago county; Rockford, R. F. D. 3.

John A. Atwood, Rep. (F), Ogle county; Stillman Valley.

Emil A. Festerling, Rep. (A); Winnebago county; Rockford.

ELEVENTH DISTRICT

The Thirty-second Ward and part of the Thirty-first Ward in the City of Chicago.

Percival G. Baldwin, Sen. (F); Cook county; 2017 West Seventieth St.

Frank J. Ryan, Rep. (F); Cook county; 6828 Bishop St.

Henry F. Schuberth, Rep., Cook county; 7843 Lowe Ave.

John H. Lyle, Rep. (A); Cook county; 6305 Yale Ave.

TWELFTH DISTRICT

The Counties of Carroll, Joe Daviess and Stephenson. Dr. Michael H. Cleary, Sen. (A); Jo Daviess county; Galena.

Chas. F. Franz, Rep., Stephenson county, Freeport.
 R. R. Thompson, Rep., Stephenson county, Kent.
 John D. Turnbaugh, Rep. (F); Carroll county; Mt. Carroll.

THIRTEENTH DISTRICT

The Eighth and Thirty-third Wards and part of the Seventh Ward in the City of Chicago, and part of the Town of Calumet, all in the County of Cook.

John A. Swanson, Sen. (F); Cook county; 6842 Harper Ave.
 James W. Ryan, Rep (F); Cook county; 9034 Burley Ave.
 Gotthard A. Dahlbert, Rep., Cook county; 24 West 113th St.
 C. A. Young, Rep., Cook county; 2809 East 76th St.

FOURTEENTH DISTRICT

The counties of Kane and Kendall.

Thomas B. Stewart, Sen. (A); Kane county; Aurora.
 Frank R. Dalton, Rep., Kane county; Aurora.
 DeGoy B. Ellis, Rep. (F); Kane county; Elgin.
 Harold C. Kessinger, Rep. (F); Kane county; Aurora.

FIFTEENTH DISTRICT

Parts of Ninth, Tenth and Eleventh Wards in City of Chicago.

John J. Boehm, Sen. (F); Cook county; 1901 South Halsted.
 Jos. O. Hruby, Rep., Cook county; 1806 South Racine Ave.
 Peter F. Smith, Rep. (F); Cook county; 1608 South Union Ave.
 Thomas Curran, Rep. (F); Cook county; 2023 South Racine Ave.

SIXTEENTH DISTRICT

The Counties of Livingston, Marshall, Putnam and Woodford.

Christian Hasse, Sen. (F); Woodford county; Washburn.
 Michael Fahy, Rep. (F); Marshall county; Toluca.
 Simon E. Lantz, Rep. (F); Woodford county; Congerville.
 Wm. H. Bentley, Rep. (F); Livingston county; Pontiac.

SEVENTEENTH DISTRICT

The Nineteenth Ward and parts of the Ninth and Tenth Wards in the City of Chicago.

Edward J. Glackin, Sen. (F); Cook county; 745 Lytle St.
 John S. Burns, Rep. (A); Cook county; 622 Blue Island.
 Jacob W. Epstein, Rep. (F); Cook county; 1133 Newberry Ave.
 Edward J. Smejkal, Rep., Cook county; 560 Bunker St.

EIGHTEENTH DISTRICT

The County of Peoria.

John Dailey, Sen. (F); Peoria county; Peoria.
 Thomas N. Gorman, Rep. (F); Peoria county; Peoria.
 Robert Scholes, Rep. (F); Peoria county; Peoria.
 John F. Lynch, Rep. (A); Peoria county; Chilli-cothe.

NINETEENTH DISTRICT

The Thirteenth and Thirty-fourth Wards and part of the Twelfth Ward in the City of Chicago, the Town of Riverside and part of the Town of Cicero, all in the County of Cook.

John T. Denvir, Sen. (F); Cook county; 1847 South Crawford Ave.

James T. Prendergast, Rep. (F); Cook county; 1233 South Lawndale Ave.

Jas. C. McGlooin, Rep. (F); Cook county; 1544 South Trumbull Ave.

Solomon P. Roderick, Rep. (F); Cook county; 1328 South Spaulding ave.

TWENTIETH DISTRICT

The Counties of Grundy, Iroquois and Kankakee.
 Edw. C. Curtis, Sen., Kankakee county, Grant Park.
 Daniel O'Connell, Rep., Grundy county, Kinsman.
 Richard R. Meents, Rep., Iroquois county, Ashkum.
 Israel Dudgeon, Rep. (F); Grundy county; Morris.

TWENTY-FIRST DISTRICT

The Fourteenth Ward and parts of Seventeenth and Thirty-fifth Wards in the City of Chicago.

Edward J. Hughes, Sen., Cook county; 260 North California Ave.
 Benj. M. Mitchell, Rep. (A); Cook county; 3246 Washington Blvd.
 Frederick J. Bippus, Rep., Cook county; 4733 West Chicago Ave.
 Thos. P. Devereux, Rep. (F); Cook county; 1357 West Ohio St.

TWENTY-SECOND DISTRICT

The Counties of Edgar and Vermilion.

Martin B. Bailey, Sen., Vermilion county, Danville.
 G. A. Ray, Rep. (F); Vermilion county; Rossville.
 Wm. T. Holaday, Rep., Vermilion county; Georgetown.
 Abraham L. Stanfield, Rep. (F); Edgar county; Paris.

TWENTY-THIRD DISTRICT

The Fifteenth Ward and parts of the Sixteenth and Thirty-fifth Wards in the City of Chicago, and parts of the Town of Cicero, all in the County of Cook.

Seat contested.
 Geo. R. Bruce, Rep. (F); Cook county; 1419 North Ridgeway.
 William G. Thon, Rep., Cook county; 2210 Cortez St.
 Christian M. Madsen, Rep. (F); Cook county; 3220 Cortez St.

TWENTY-FOURTH DISTRICT

The Counties of Champaign, Moultrie and Piatt.
 Raymond D. Meeker, Sen. (F); Moultrie county; Sullivan.

Francis E. Williamson, Rep. (A); Champaign county; Urbana.

Wm. F. Burres, Rep. (A); Champaign county; Urbana.

Chas. A. Gregory, Rep. (F); Moultrie county; Lovington.

TWENTY-FIFTH DISTRICT

The Twenty-seventh and Twenty-eighth Wards in the City of Chicago.

Daniel Herlihy, Sen. (F); Cook county; 2743 North Albany Ave.

John G. Jacobson, Rep. (F); Cook county; 1625 North Claremont.

Chas. L. Fieldstack, Rep. (F); Cook county; 4016 North Harding Ave.

Joseph M. Mason, Rep. (F); Cook county; 3037 North Spaulding.

TWENTY-SIXTH DISTRICT

The Counties of Ford and McLean.

Noah Elmo Franklin, Sen. (A); McLean county; Lexington.

Daniel D. Donahue, Rep. (F); McLean county; Bloomington.
 Wm. Rowe, Rep. (F); McLean county; Saybrook.
 James C. Harvey, Rep. (A); McLean county; Bloomington.

TWENTY-SEVENTH DISTRICT

The Eighteenth Ward and parts of the Sixteenth and Seventeenth Wards in the City of Chicago.
 John Broderick, Sen. (F); Cook county; 122 South Aberdeen St.
 Joseph A. G. Trandel, Rep. (F); Cook county, 1332 Julian St.
 Jas. N. Donlan, Rep. (F); Cook county; 964 West Madison St.
 Albert Rostenkowski, Rep. (F); Cook county; 1237 Noble St.

TWENTY-EIGHTH DISTRICT

The Counties of DeWitt, Logan and Macon.
 Willis R. Shaw, Sen., Macon county, Decatur.
 Clifford Quisenberry, Rep., Logan county, Lincoln.
 Edward C. Perkins, Rep. (F); Logan county; Lincoln.
 R. C. Buxton, Rep., Macon county, Decatur.

TWENTY-NINTH DISTRICT

Parts of the Twenty-first and Twenty-second Wards in City of Chicago.

Patrick J. Sullivan, Sen. (F); Cook county; 301 West Chicago Ave.
 James H. Farrell, Rep. (F); Cook county; 1147 Wells St.
 Bernard J. Conlon, Rep. (F); Cook county; 444 Pine St.
 Medill McCormick, Rep., Cook county; 909 Lake Shore Drive.

THIRTIETH DISTRICT

The Counties of Brown, Cass, Mason, Menard, Schuyler and Tazewell.

Walter I. Manny, Sen. (F); Brown county; Mt. Sterling.
 A. M. Foster, Rep., Schuyler county, Rushville.
 Wm. H. Groves, Rep., Menard county, Petersburg.
 Homer J. Tice, Rep. (A); Menard county; Greenville.

For further information concerning Senator Manny's action, see reading matter at top of this article.

THIRTY-FIRST DISTRICT

Parts of Twenty-first, Twenty-second, Twenty-third and Twenty-fifth Wards in the City of Chicago.

Willett H. Cornwell, Sen. (F); Cook county; 3825 Alta Vista Terrace.
 Frank J. Seif, Jr., Rep. (F); Cook county; 1529 Orchard St.
 Harry F. Hamlin, Rep. (F); Cook county; 5730 Malden St.
 E. I. Frankenhauser, Rep., Cook county; 5517 Winthrop Ave.

THIRTY-SECOND DISTRICT

The Counties of Hancock, McDonough and Warren.
 Wm. A. Compton, Sen. (F); McDonough county; Macomb.
 John Huston, Rep., McDonough county; Blandinsville.
 Robert A. Elliott, Rep. (F); Warren county; Monmouth.
 James M. Pace, Rep., McDonough county; Macomb.

THIRTY-THIRD DISTRICT

The Counties of Henderson, Mercer and Rock Island.

Frank A. Landee, Sen., Rock Island county; Moline.
 Wm. C. Maucker, Rep., Rock Island county, Rock Island.
 Thomas Campbell, Rep. (F); Rock Island county; Rock Island.
 Wm. J. Graham, Rep.; Mercer county; Aledo.

THIRTY-FOURTH DISTRICT

The Counties of Clark, Coles and Douglas.

John R. Hamilton, Sen., Coles county; Mattoon.
 C. A. Purdunn, Rep., Clark county; Marshall.
 Harry W. Drake, Rep. (A); Clark county; Marshall.
 E. Walter Green, Rep. (A); Douglas county; Hinsboro.

THIRTY-FIFTH DISTRICT

The Counties of DeKalb, Lee and Whiteside.
 Adam C. Cliffe, Sen. (A); DeKalb county; Sycamore.
 John P. Devine, Rep. (A); Lee county; Dixon.
 William L. Leech, Rep., Lee county, Amboy.
 F. A. Brewer, Rep. (F); Whiteside county; Tampico.

THIRTY-SIXTH DISTRICT

The Counties of Adams, Calhoun, Pike and Scott.
 Charles R. McNay, Sen. (to fill vacancy) (A); Adams county; Ursa.
 Wm. H. Hoffman, Rep., Adams county, Quincy.
 Edwin Thomas Sturbinger, Rep. (A); Pike county; El Dara.
 Geo. H. Wilson, Rep., Adams county; Quincy.

THIRTY-SEVENTH DISTRICT

The Counties of Bureau, Henry and Stark.

Clayton C. Pervier, Sen. (F); Bureau county; Sheffield.
 Frank W. Morrassy, Rep. (F); Bureau county; Sheffield.
 Randolph Boyd, Rep., Henry county; Galva.
 John R. Moore, Rep. (F); Henry county; Kewanee.

THIRTY-EIGHTH DISTRICT

The Counties of Greene, Jersey, Macoupin and Montgomery.

Stephen D. Canaday, Sen. (F); Montgomery county; Hillsboro.
 Wm. Hubbard, Rep. (F); Greene county; Carrollton.
 H. A. Shepard, Rep. (F); Jersey county; Jerseyville.
 Otto C. Sonnemann, Rep. (F); Macoupin county; Carlinville.

THIRTY-NINTH DISTRICT

The County of La Salle.

Peter E. Coleman, Sen. (F); LaSalle county; LaSalle.
 Lee O'Neil Browne, Rep., LaSalle county; Ottawa.
 Ole E. Benson, Rep. (F); LaSalle county; Ottawa.
 Wm. M. Scanlan, Rep. (F); La Salle county; Peru.

FORTIETH DISTRICT

Counties of Christian, Cumberland, Fayette and Shelby.

E. Jeff Tossey, Sen. (A); Cumberland county; Toledo.
 Arthur Roe, Rep., Fayette county; Vandalia.
 John C. Richardson, Rep., Christian county; Edinburg.
 Walter M. Provine, Rep., Christian county; Taylorville.

FORTY-FIRST DISTRICT

The Counties of Du Page and Will.

Richard J. Barr, Sen., Will county; Joliet.
Michael J. Hennebry, Rep., Will county; Wilmington.
Wm. R. McCabe, Rep. (F); Will county; Lockport.
Squire F. Tompkins, Rep., Will county; Joliet.

FORTY-SECOND DISTRICT

The Counties of Clay, Clinton, Effingham and Marion.

Dr. F. C. Campbell, Sen. (A); Clay county; Xenia.
Walt. E. Rinehart, Rep. (F); Effingham county; Effingham.
John W. Thomason, Rep., Clay county; Louisville.
Chas. W. Vursell, Rep. (A); Marion county; Salem.

FORTY-THIRD DISTRICT

The Counties of Fulton and Knox.

W. C. Jewell, Sen., Fulton county; Lewistown.
Wm. H. Basel, Rep., Fulton county; Astoria.
Owen B. West, Rep. (F); Knox county; Yates City.
James E. Davis, Rep. (F); Knox county; Galesburg.

FORTY-FOURTH DISTRICT

The Counties of Jackson, Monroe, Perry, Randolph and Washington.

Kent E. Keller, Sen. (A); Jackson county; Ava.
W. T. Morris, Rep., Perry county; Duquoin.
Harry Wilson, Rep., Perry county; Pinckneyville.
Hawkins O. Murphy, Rep. (F); Perry county; Pinckneyville.

FORTY-FIFTH DISTRICT

The Counties of Morgan and Sangamon.

Elbert S. Smith, Sen. (F); Sangamon county; Springfield.
Edward L. Merritt, Rep., Sangamon county; Springfield.
Wm. J. Butler, Rep., Sangamon county, Springfield.
Thomas E. Lyon, Rep., Sangamon county, Springfield.

FORTY-SIXTH DISTRICT

The Counties of Jasper, Jefferson, Richland and Wayne.

W. Duff Piercy, Sen. (A); Jefferson county; Mount Vernon.
John Kasserman, Rep. (A); Jasper county; Newton.
John L. Cooper, Rep. (A); Wayne county; Fairfield.
Chas. L. Wood, Rep. (A); Wayne county; Keenes.

FORTY-SEVENTH DISTRICT

The Counties of Bond and Madison.

J. G. Bardill, Sen. (F); Madison county; Highland.
Ferd A. Garesche, Rep., Madison county; Madison.
Norman G. Flagg, Rep. (F); Madison county; Moro.
Chris Rethmeier, Rep. (F); Madison county; Edwardsville.

FORTY-EIGHTH DISTRICT

The Counties of Crawford, Edwards, Gallatin, Hardin, Lawrence, Wabash and White.

Dr. J. A. Womack, Sen. (A); Gallatin county; Equality.
Carl Green, Rep. (A); Crawford county; Robinson.
Richard F. Taylor, Rep., Hardin county; Elizabethtown.
James A. Watson, Rep. (F); Hardin county; Elizabethtown.

FORTY-NINTH DISTRICT

The County of St. Clair.

Paul W. Abt, Sen. (F); St. Clair county; East St. Louis.

John T. Desmond, Rep., St., Clair county; East St. Louis.

Stephen T. LePage, Rep. (A); St. Clair county; East St. Louis.

James W. Rentschler, Rep. (A); St. Clair county; Bellevue.

FIFTIETH DISTRICT

The Counties of Alexander, Franklin, Pulaski, Union and Williamson.

D. T. Wood, Sen. (F); Franklin county; Benton.
James H. Felts, Rep., Williamson county; Marion.
Chas. Curren, Rep. (F); Pulaski county; Mound City.
C. A. Stewart, Rep. (F); Franklin county; West Frankfort.

FIFTY-FIRST DISTRICT

The Counties of Hamilton, Johnson, Massac, Pope and Saline.

Sam. W. Latham, Sen. (absent); Saline county; Eldorado.

W. C. Kane, Rep., Saline county; Harrisburg.
Elwood Barker, Rep. (A); Hamilton county; McLeansboro.

Oral P. Tuttle, Rep. (F); Saline county; Harrisburg.

In view of all that has been said members of the medical profession residing in the respective districts outlined above should make a memorandum of the way their Senator and Representatives voted for or worked to bring about the passage of the notorious Optometry Bill (in the 49th General Assembly) and at once get busy, perfect an organization and work consistently from now until the convening of the next session of the Legislature to the end that as many as possible of these men who voted for the Optometry Bill at the last session will fail of re-election when they again go before the voters, otherwise the people will have foisted upon them at the next session Osteopathic and all the other freak medical Legislation ever heard of.

LEGISLATIVE COMMITTEE,

Illinois State Medical Society.

PUBLIC RELATIONS COMMITTEE,

Chicago Medical Society.

Fresh air is the best life assurance agency.

* * *

Get the fresh air habit; dress warm enough to enjoy it.

* * *

Colds are "catching."

* * *

Coddle yourself and you flirt with pneumonia.

* * *

Breathe freely and fully; the more you expand your chest the less you will contract colds.

—*Healthgrams from Bulletin, Chicago Department of Health.*

Auto Sparks and Kicks

RULES FOR CAR CLEANING.

No varnish will endure being scrubbed with a brush or with hot water, says W. J. Mead of the Chicago Chevrolet branch. No varnish will withstand the chemical action of ammonia or any kind of lye soap nor any of the common washing fluids or powders. No varnish will stand having dust or mud rubbed off nor will it endure the grist of dust and mud driven into it by the water blast from a high pressure hose to which it is often subjected.

Use water at 60 degrees or lower and a soft, clean cloth or sponge. It is best to use no kind of soap unless it is pure castile. Mud, wet or dry, should be removed with flowing water squeezed from a clean sponge or flowing from a hose with little pressure—never with a water blast.

When not in use keep the car covered with a soft-lined cover. All dust contains grit and all smoke contains acid, and against these a cloth cover offers adequate protection.

However well varnish has endured weather testing, it may be seriously affected by instant extremes of temperature. A glass dish may be filled with boiling water, slowly, without cracking it, and may be filled with ice water, slowly, but it will invariably crack if plunged instantly from boiling water into ice water, and vice versa.

FIRE-EXTINGUISHING CHEMICALS.

Carbon tetrachloride is an excellent fire extinguisher. It is a liquid which may be purchased at any drug store for 15 cents a pound. Another compound that has been used with success is two parts of common salt, one part ammonium chloride and seven parts water.

WHY BLACK?

With the time of the year when new models are settling down into regular production it is to be noticed that a few manufacturers are breaking away from the black finish that lately threatened to become universal. Of course, the reason for using black in the first place was that it was cheaper than a color and a little black enamel has a great covering power, but black is the very

worst paint that could possibly have been chosen for automobile finishing.

Firstly, black shows the tiniest speck of mud or dust long before any other color and two cars starting out in the morning, one black and the other gray, will look totally different at the end of the same run. In a day's use in a town, even in good weather, a black car loses its freshly washed appearance almost at once, and by the afternoon it is dingy. On the other hand, a gray or blue, or brown, even a dark green or a maroon tint, will look fresh for days together.

Then again black is dependent absolutely upon its varnish, for without the gloss it rapidly takes on a rusty tinge like a hobo's coat, which no washing will ever remove. A colored car looks its best, of course, when the varnish is new, but when it has eventually gone dull it still lacks the seedy appearance of old black; it still looks fresh after a wash and the owner's pride in his car is generally more lasting. What's the use in washing a car that looks none the better for it?

The days of bright colors are gone perhaps; some yearn for brilliant reds and yellows, but good neutral tint browns and grays that both look well and wear well ought to be considered by manufacturers much more than they have been.—The Automobile.

TWO TYPES OF CARBURETOR.

Some carburetors have a valve by which it is possible to change the size of the hole through which the gasoline enters the mixing-chamber at the top of the spray nozzle.

A fixed-nozzle carburetor has no such adjustment and in order to change the nature of the mixture the amount of air entering the carburetor must be regulated. Cutting down on the air will increase the vacuum and cause the mixture to be richer. By allowing more air to enter the mixture will be leaner in character.—*Exch.*

WHAT TO USE ON LEATHER.

Do not use gasoline in cleaning leather upholstery. Plain water with a little ammonia will remove the dirt and a brisk rubbing with a clean woolen or flannel cloth will do the rest. For still more careful treatment use a regular leather dressing.

Society Proceedings

COOK COUNTY

CHICAGO MEDICAL SOCIETY

Regular Meeting, October 6th, 1915.

1. Results of American First Aid Conference, Joseph C. Bloodgood, Baltimore, Md.
2. Newer Methods of Caesarian Section, J. B. DeLee; Lantern Slides; Discussion, C. S. Bacon and H. M. Stowe.
3. Lantern Slide Lecture on His Work in Sex Gland Implantation, G. Frank Lydston.

Regular Meeting, October 13, 1915

1. Report on a Typhoid Epidemic in Belgium, Caroline Hedger.
2. Hernias of the Urinary Bladder, Aime Paul Heineck; Discussion, Carl Beck and A. J. Ochsner.
3. Longevity in Its Relation to Sex, or Why Fewer Men Than Women Attain Old Age, Albert H. Burr; Discussion, Gordon G. Burdick and Margaret Jones.

Regular Meeting, October 20, 1915

1. The Chronic Running Ear (20 minutes), R. H. Brown; Discussion, Norval H. Pierce and Adolph Hartung.
2. Action of Adrenalin in Gastric Crisis and Its Relation to Betaiminazolyethylamine (10 minutes), Bayard Holmes.
3. An Outline of the Medical Care of the Soldier in the Field, Lieutenant Colonel W. B. Bannister, U. S. M. C.

Joint Meeting of the Chicago Medical and Dermatological Societies, October 27, 1915

Subject for the evening, "Leprosy."

The Importance of the Subject, Joseph Zeisler.

Clinical Description, Oliver S. Ormsby.

Pathology and Bacteriology, Fred G. Harris.

Sanitary Aspects of Leprosy in the United States, William A. Pusey.

Discussion to be opened by David Lieberthal.

CHICAGO LARYNOLOGICAL AND OTOLOGICAL SOCIETY.

Regular Meeting, Held March 16, 1915, With the President, Dr. George W. Boot, in the Chair.

ANOMALOUS CONDITION OF MIDDLE EAR, WITH PULSATION OF LOWER HALF OF MEMBRANA TYMPANI AND DISTAL END OF THE FLOOR OF THE AUDITORY CANAL.

Dr. Otto J. Stein saw this patient for the first time in November, 1914—about four months ago. At that

time he gave a history of having been deaf in the left ear, the right ear being normal. At no time has there been a history of any discharge or pain. The only thing noticed was that the loss of hearing began rather gradually, accompanied by tinnitus and some vertigo. When first seen, the drum was a little red, probably from manipulation incident to treatment. He had been under the care of some others prior to coming to the speaker. This redness gave the impression of an inflammation, but as that subsided one could see that the drum was very flaccid and thin, and apparently otherwise normal. There was no evidence of a scar. It lay well forward toward the floor and anterior wall of the canal, giving the impression as of something pushing it from behind outward and forward. When the otoscope was inserted firmly, and compression made, this flaccid drum was driven back to its more normal position, and as the air reentered allowing the drum to sink outward and forward, you could see the pulsation synchronous with the carotid. There was no hearing whatsoever in that ear, neither bone nor air conduction. Since being under observation he has a little bone conduction. His static apparatus is all right. He had a very faint rotary nystagmus on looking straight forward when twelve milliamperes of current were used. Otherwise negative. Responded to all tests.

Dr. Stein presented the case as a rather curious anatomical anomaly. He did not know the exact pathology. On compression of the carotid in the neck with the finger the patient said the tinnitus was markedly diminished. If pressed long and hard enough, it would disappear altogether.

The patient has remained in about the same condition as when first seen, four months ago, and at that time he had had the trouble for six months.

DISCUSSION.

Dr. Otis H. Maclay asked if the blood pressure is very high.

Dr. Stein said he did not know the blood pressure. He had some x-ray plates which are interesting, which he showed to the members.

Dr. Shambaugh asked if there was no discharge at any time. Also if there was perforation.

Dr. Stein replied that there was no discharge at any time. Also, there was no perforation, except that done traumatically. From examination of the x-ray pictures, it looked to him like a diverticulum off the sigmoid portion of the sinus, like an appendix coming off toward the floor of the canal.

UNUSUAL CASE OF VERTICAL NYSTAGMUS CAUSED BY LABYRINTHINE IRRITATION.

Dr. Alfred Lewy exhibited this case. The man is forty-two years of age; married; gives a history of discharge from the ear in childhood, which has not troubled him since he was about ten years of age, but for the last year has been complaining of mild vertigo coming on suddenly, particularly on sudden movements of the head or turning the eyes suddenly to either extreme. The patient admitted having syphilis about twenty years ago.

On examination, the speaker found a large anterior marginal perforation in the left drum membrane, and both ears gave the usual findings of a marked conduction deafness, more marked in the ear with the perforated membrane. After rotation, nystagmus is thirty seconds to either side. On account of the perforation, the speaker did not try the caloric test, and did not have any electrical apparatus handy for the electric tests. He did find, however, that on compression of air in the left canal he had a marked vertical nystagmus, two or three jerks downward, and Dr. Lewy believed this to be a very rare condition; in fact, some claim that there is no such thing as a vertical nystagmus from the labyrinth. It is very evident that this nystagmus is caused by labyrinthine irritation. The Doctor, however, was not prepared to give any explanation for it. He hoped some of the members could offer an explanation of such a condition in the presence of a perforated drum membrane.

Dr. Shambaugh asked if he could get the reverse nystagmus by suction, to which Dr. Lewy replied that the suction reaction was doubtful.

DISCUSSION.

Dr. J. R. Fletcher believed there was a fistula present in the case, but unless the eyes move in opposite directions by compression in one and suction in the other, it is not demonstrated. At least, that was the law laid down by Barany, and seemed to the speaker to be correct. You can have the reasonable probability with movement in one direction, but no proof.

The speaker has produced a nystagmus by direct pressure, which would move the stapes inward, and that might be the case in the patient presented. He remembered indistinctly a case he saw a good many years ago of vertical nystagmus, and his impression was very strong that this man had a fistula in the oval window and a vertical nystagmus was produced by pressure. There was no nystagmus by suction. It was tried then to see whether the same thing could be produced on a perfectly normal individual, and one of the doctors present volunteered for that purpose, and with strong pressure a nystagmus in one direction could be produced.

Dr. George E. Shambaugh said that he was not inclined to exclude the existence of a fistula where one is able to produce a nystagmus in one direction by pressure, but fails to get the reverse nystagmus by suction. One can easily imagine the development of pathological conditions about the opening of the fistula which would permit a motion of the endolymph being caused either by suction or pressure, but not by both. One also gets a fistula symptom in cases where no fistula exists. He has been able to develop this symptom by the inflation of the middle ear in cases where there had never been a suppurative disease. The nystagmus which occurs in fistula cases is in the plane of the canal which is involved. For this reason it is not easy to figure out how a vertical nystagmus can be caused. The horizontal and the superior canals are the two which encroach upon the middle ear spaces, and in which fistula can develop from suppurative otitis media. Possibly a fistula into the vestibule, associated with inflammatory deposits in the labyrinth, might result in producing endolymph currents by pressure which could so affect two of the canals as to produce vertical nystagmus.

Dr. Lewy, in closing the discussion, did not see why we must assume that the nystagmus is necessarily the result of a lesion in one of the canals. It is possible that the general compression of the endolymph through the pressure produced on the round window and oval window through the external canal may in some way affect the end organ in the sacculle or utricle, and in that way cause a nystagmus, but as

to whether a fistula was the cause of the nystagmus, the speaker could not say. His principal reason for presenting the case was that it was only recently that he read a statement in a laryngological journal that there was no such thing as vertical nystagmus resulting from a lesion of the labyrinth, and it is very evident in the case presented that this nystagmus is induced by irritation of the labyrinth.

EXHIBITION OF THREE PATIENTS OPERATED ON BY THE "STANDARD TONSILLECTOMY," TO BE DESCRIBED LATER IN DR. FLETCHER'S PAPER.

Dr. J. R. Fletcher said that he had shown these patients to quite a number of the gentlemen present. His purpose in bringing them was to show that one can get by dissection, called the "standard tonsillectomy," uniform results, which seem to the speaker to be desirable—namely, rudimentary tonsillar fossa and a minimum scar. The first case was operated on four years ago, the second case one and one-half years ago, and the third one just one week ago. The results in the two which had healed are almost identical, and he knows from former experience that the same result will obtain in the third case. As the paper would show, the speaker believes there is a reason for such uniform results.

SPECIMEN OF RIGHT FRONTAL SINUS WHICH EXTENDED DOWNWARD, SEEMING TO SEPARATE THE CRISTA, AND EXTENDING INTO THE PERPENDICULAR PLATE OF THE ETHMOID. EXHIBITION OF X-RAY PICTURE OF CASE.

Dr. L. W. Dean, Iowa City, Iowa, said this specimen had been discovered in working out a series of anomalous frontal sinuses. In this specimen the right frontal sinus extended downward, seemed to separate the crista, and extended into the perpendicular plate of the ethmoid. The x-ray showed this sinus descending into the bone of the septum.

DISCUSSION.

Dr. George E. Shambaugh stated that he had in his collection a specimen somewhat similar to the one shown by Dr. Dean. In his specimen the frontal sinus on one side had a prolongation down into the nasal bone, but no opening into the nose. There was a large defect in the septum, separating the sinuses, and the drainage was through the opposite frontal sinus. It is not easy to see how a sinus of this sort develops. The frontal sinus is an outgrowth from the middle meatus. It seems probable that the opening in the nose had become closed by pathological conditions and the artificial opening had been made through the septum into the opposite sinus.

CASES OF LATERAL SINUS THROMBOSIS.

Dr. Boot reported four cases of lateral sinus thrombosis in detail.

CASE 1. Male, aged 18. One month ago was operated on for enlarged turbinates. Used a nose wash which he snuffed up his nose. A few days later complained of pain in the right ear, which was soon followed by a discharge from that ear. The ear had been running ever since, and the pain continued until the evening before admission to the hospital. At this time he says he became feverish and felt sick. Has

had no chill, nausea or vomiting. Temperature on admission was 104.2; pulse 128; respirations 24. Blood examination showed 20,100 whites. Mastoid operation performed the same afternoon by Dr. Friedberg, at which time lateral sinus was exposed, and found to all appearances normal. Small drain inserted and wound closed. Temperature continued irregular for nine days, when Dr. Boot reopened the mastoid, in Dr. Friedberg's absence, and exposed and opened the lateral sinus. A thrombus was removed after evacuating pus. Free bleeding obtained from upper portion of sinus, but not from lower. Upper end tamponned with iodoform gauze, drain inserted and wound dressed. Temperature at times fell to normal, but did not remain so, after this operation. Had several chills. Intense pain in shoulder, arms and hips. Blood count showed 20,080 whites. Operation six days following second one, and right jugular exposed and opened, liberating about 3 drams of pus. The vein was not ligated. Small rubber drain passed upwards inside the vein as far as the temporal bone. The day following there were tenderness and swelling over left great trochanter. Twelve days after this an abscess over left great trochanter was opened, and about a pint of pus evacuated. Seventeen days following the third operation the wound in the neck was closed, and mastoid wound closing. General condition good. This case shows what a severe amount of trouble may occur in a case where there is apparently but slight infection in the mastoid. The speaker regretted that he did not ligate the jugular at the time of the sinus operation, because he feels that if this had been done, the patient might have been saved a great deal.

CASE 2. Male, aged 4. Admitted to Cook County Hospital May 8, 1914, with scarlet fever. Given 1,000 units of antitoxin. On May 11th, 10,000 units of antitoxin given. At 10:30 of the same day another 5,000 units of antitoxin were given. May 12th, 15,000 units; May 13th, 10,000 units; May 19th, 10,000 more units of antitoxin given. On May 14th, ears began to discharge. The case appeared to be one of severe nasal diphtheria, but culture for diphtheria was negative. On May 30th a simple mastoid operation was done on the left side. Drain inserted. On June 10th temperature went up to 105.6°. Wound was reopened, sinus exposed, opened and thrombus removed. Free bleeding secured from each end of the sinus. Tampon of iodoform gauze. On June 12th, the little patient managed to tear off all the dressings and following this had a profuse hemorrhage from the sinus. On June 14th the patient again removed the dressings, and had considerable bleeding. Patient died on June 16th, from the toxemia from the scarlet fever, although this was doubtless assisted by the loss of blood which occurred at the time when he tore off the dressings. Also, in all probability the large amount of antitoxin contributed to the fatal result.

CASE 3. Female, aged 3 years and six months. Had attack of pneumonia five weeks before present illness, which began two weeks before admission with severe

pain in right ear. The drum membrane ruptured spontaneously and pain became easier. Discharged stopped after one day. Five days later a swelling appeared behind the ear. Admitted to Children's Memorial Hospital on May 27, 1914, with temperature of 105°. The right canal was wet with pus, and there was some redness and tenderness over right mastoid, May 28th: Throat culture negative for diphtheria. May 30th: Mastoid operation. Lateral sinus exposed and found eroded and thrombosed. Musopus found around sinus. Free bleeding secured from upper portion of sinus, but not from lower. Upper portion closed by a tampon of gauze and a drain inserted. On June 2nd temperature 106°. No rigidity of neck; no spasticity or rigidity of extremities. Temperature continued irregular until June 8th, when jugular vein was exposed and found filled with an organized thrombus. From this time on her temperature gradually improved until June 24th, when she was found to have diphtheria, from which she recovered completely. The condition in the sinus in this case was very similar to that in Case 1, but fortunately for the patient the thrombus in the jugular bulb and vein became organized instead of breaking down into pus, and there were no pyemic abscesses.

CASE 4. Male, aged 21. Admitted to Cook County Hospital, December 7, 1914. Tenderness quite marked over mastoid and occipito-temporal region. No marked signs of local inflammation. No palpable masses of fluctuation. Right ear: External ear not swollen; tender and painful on movement. No pus from external meatus. Drum looks thickened and congested. Muscles of neck rigid, especially posterior cervical. Glandular enlargement marked. Complete seventh nerve paralysis on right side, involving upper lid and forehead. Slight chronic pharyngitis. December 12th: Operation. Outer wall of mastoid of ivory hardness, about four or five millimeters thick. Knee of sigmoid sinus projected into this cavity. When the cavity was cleaned out, two sequestra were found in its flow which must have reached almost to the labyrinth. Usual plastic was done on membranous canal and wound closed. Erysipelas developed subsequent to operation, which had pretty well cleared up by December 21st. Blood count on December 21st, 28,000 leucocytes. On December 22nd, patient had chilly sensations, and temperature of 103.6°. With the erysipelas clearing up rapidly, the chill and temperature made Dr. Boot suspect a sinus thrombosis. Accordingly, the patient was anesthetized and the bone removed still farther from over the sinus, with the intention of exploring the sinus. In removing a piece of bone with the biting forceps a small splinter penetrated the sinus and free bleeding occurred, putting an end to his suspicions of thrombosis. The sinus walls were softened and covered with granulations. The sinus was tamponned and wound packed. Erysipelas gradually cleared up, and on January 8th had normal temperature.

Dr. Boot cited this case to show the difficulties which may occur at times in the diagnosis of a sinus throm-

basis. This patient had a streptococcus infection causing erysipelas, but the streptococcus, we know, frequently causes sinus thrombosis. There seemed to be fully as much chance that a sinus thrombosis was occurring as that an erysipelas was recurring, and, knowing the virulence of streptococcus infection about the ear, he explored the sinus without waiting; had he waited another twenty-four hours he probably would not have operated on the sinus.

In cases 1 and 3 he was not able to get free bleeding from the lower extremity of the sinus, that is, from the jugular bulb. Under similar circumstances in the future he expects to ligate the jugular vein. It seems to him the small amount of risk and danger to the patient is fully offset by the lessened risk of pyemia.

DISCUSSION.

Dr. Robert Sonnenschein said, apropos of the difficulty of recognizing the presence of sinus thrombosis, he wanted to briefly report a case in which Dr. Boot had kindly assisted him. The man was about thirty years of age, and was admitted to the County Hospital the previous week with a history of discharge from the ear for the past month. There was no history of chill or high temperature. Temperature on admission was 99°. There was some tenderness over the mastoid, and profuse, thick, purulent discharge from the ear. The next day a simple mastoid was done—the antrum found rather high, and apparently all necrotic bone removed. The patient, however, did not recover consciousness. Temperature on the day of operation was 101°, and on Saturday, the day following the operation, it went up to 103° at noon. He was reoperated and the sinus uncovered, it being necessary to go through solid, apparently healthy bone to reach the sinus. It was found filled with pus and a clot. The patient was moribund when placed on the table, and died shortly after the sinus was exposed. In this case there was absolutely no history of chill and high temperature until an hour or two before the past operation. The leucocyte count on the day of operation was 25,000.

Dr. Boot said that he had hoped the members would discuss the diagnosis and treatment of sinus thrombosis, especially with reference to the point of whether to ligate the jugular or not.

Dr. George E. Shambaugh said he thought sinus thrombosis is the most frequent serious complication that occurs in acute suppurative otitis media. The typical symptoms when the sinus is the seat of absorption are so characteristic that they can scarcely be mistaken. The high temperature, the sudden drop to subnormal, a sudden chill, and a recurrence of the same fluctuation in temperature. Not all the cases presenting these classical symptoms require the same treatment. These symptoms occur apparently from an involvement of the veins leading from the mastoid to the sinus, and where there is no actual thrombosis of the sinus itself. Dr. Shambaugh has several times operated and exposed the sinus in the presence of the characteristic fluctuations in temperature only to find no evidences of a thrombosis, with a droplet of pus apparently in contact with the sinus wall. Such cases usually recover promptly simply on removal of the condition in the mastoid.

The question of what should be done when the sinus is found to be thrombosed must be decided differently in different cases. Where there is no evidence of a softening of the thrombus, a free opening of the sinus, with perhaps a partial removal of the thrombus, is very often better than an attempt to get bleeding from both ends. In cases where there is a suppurating thrombus, an effort should be made to remove as much as possible of the infected thrombus. Before this is undertaken the internal jugular should first be ligated.

Dr. Norval H. Pierce said a practical point was raised by Dr. Boot's paper, namely, the question of waiting. There are certain operators who, given a chill and a sudden rise

in temperature, accompanied by a high leucocyte count and a running ear, will immediately operate on a sinus, open the sinus, and ligate the jugular. After a long experience he has come to the conclusion that that is a mistake. He does not think we should rush suddenly into any of these cases. He does not think that the patient's life is particularly endangered by waiting, by introducing the element of very careful observation before we go into these cases. He has had several experiences such as those cited by Dr. Boot, where, in the course of an otitis media—suppurative—the patient has had a chill and high elevation of temperature, accompanied by a high leucocyte count. In the course of a few hours or the next day an erysipelas developed, and there are other things that may happen in the body that will give this same picture, such as pneumonia, malaria, etc.

But once the diagnosis is made of a sinus thrombosis, his experience has taught him that we can scarcely be too radical. He has tried the method of slitting up the sinus and allowing the thrombus to remain *in situ*, simply packing it open, but has been rather disappointed in this method. He believes an endeavor should be made to get a hemorrhage from both ends of the wound, and failing hemorrhage from the lower portion we should not only ligate the jugular, but we should dissect it out from above the facial to as near as possible to the clavicle.

He would say that a leucocyte count should be taken in all cases of mastoid trouble, where operation is performed, and if a very high leucocyte count is found, we should be very careful to explore very much more thoroughly than we would if we did not find such a high leucocyte count before operation.

Dr. Kahn asked Dr. Pierce what he thought about blood cultures, to which Dr. Pierce replied that he did not believe they amounted to very much as a pathognomonic sign of sinus thrombosis. The work of Duel and others in New York is so contradictory that he does not believe much dependence can be placed on the findings of bacteria in the blood as a sign of sinus thrombosis. In his own work, which has been very limited in that regard, because after reading the work above referred to he came to the conclusion that it was not dependable, he has found bacteria in the blood where there could not possibly have been any sinus thrombosis whatever. Therefore, he would say that the bacteriemia is not an indication of sinus thrombosis.

Dr. S. A. Friedberg fully agreed with Dr. Pierce in regard to conservatism in these cases. However, he thinks there are times when we can be too conservative. He thinks too much reliance has been placed on blood findings, waiting for the high leucocytosis. A low leucocyte count does not exclude sinus infection, by any means. Neither does a negative blood culture. His experience with blood cultures has been about fifty per cent positive. We know, too, that we may get a positive blood count from other infections—from a streptococcal sore throat, for instance. A certain work carried out at the Durand Hospital for Infectious Diseases found that in almost all the cases examined—he could not recall the exact number—cultures were made aerobically and anaerobically, and organisms were found in at least ninety per cent of the cases were quite careful culture work was done in conditions other than sinus infections. He recalled two cases seen recently of sinus thrombosis in which the infection extended to the meninges—cases in which there was no definite picture of sinus involvement, although suspicion of it was present at the time. In one of these cases there were chilly sensations—not regularly—perhaps not more than one in a week; a relatively low temperature; a leucopenia instead of leucocytosis; and a negative blood culture. The speaker wished to bring out one point in connection with suspected sinus infection: The mere fact that a sinus appears normal does not necessarily mean that there is nothing in the sinus. During the last few months he has seen two cases where a practically normal-appearing sinus contained pus.

(To be continued)

FULTON COUNTY

Eighteenth Annual Meeting, October 5, 1915

The eighteenth annual meeting of the Fulton

County Medical Society was held in the Auditorium of the Y. M. C. A. building in Canton, Ill., October 5, 1915, and was called to order at 1:30 p. m. by President Howard.

Dr. Simmons was appointed secretary pro tem. Minutes of the July meeting were read and adopted.

The president appointed Drs. Chapin, Shallenberger and Snively as auditing committee.

Chairman Stoops of the committee on by-laws reported that 300 copies of the new constitution and by-laws had been printed and that their work had been completed.

On motion, the report was adopted and the committee discharged.

Secretary Ray having arrived, Secretary pro tem Simmons was relieved.

The election of officers resulted as follows: Dr. C. N. Allison was elected president; Dr. J. C. Simmons, first vice-president; Dr. D. S. Ray, secretary-treasurer; Dr. C. E. Howard, delegate to the state meeting for the term of two years; Dr. P. H. Stoops, necrologist.

Dr. Oren objected to the form of the elections and nominations as not conforming to the new by-laws.

Chapin and W. D. Nelson moved that the by-laws pertaining to the nomination of officers by ballot be suspended in the election of officers today. Carried.

Chapin and W. D. Nelson moved that the officers elected be hereby ratified. Carried.

Dr. Chapin was elected member of the board of censors for the term of three years.

Drs. Connelly and Chapin moved that the terms of the two holdover members of the Board of Censors be hereby ratified as follows: Dr. Parks for one year and Dr. Scholes for two years. Carried.

Auditing committee reported that they had found the secretary-treasurer's report correct. Report was adopted and committee discharged.

Secretary-treasurer's report was read, showing with \$97.77 on hand at the beginning of the year, collections had been made totaling receipts at \$305.27.

Bills to the amount of \$176.37 had been paid, leaving \$128.90 cash on hand.

The report was adopted.

Printing bill of the *Ipava Tribune* was read and allowed.

On motion a recess of 15 minutes was taken.

Dr. J. F. Percy of Galesburg presented a paper on "Some Results of the Application of Heat in Inoperable Carcinoma of the Uterus."

General discussion followed.

Among the many good features of the paper Dr. Percy, in the final discussion, emphasized the points that cancer cells were destroyed by a temperature of 115 F., while the normal cell would

stand 140 to 145 F. without damage and that the hand in a rubber glove was the most convenient means of regulating the heat. When the electrode became too hot for the hand in the rubber glove it was too hot for normal cells; also that it was impossible to say that the disease was, or that it was not, due to an organism. At times he was inclined to think that it, was but it was impossible to prove it.

Dr. Milton Portis, Chicago, presented a very valuable paper on "The Differential Diagnosis of Lesions of the Right Upper Quadrant of the Abdomen."

"Some Disturbances of Metabolism Affecting the Ocular Tissues" was ably given by Dr. Frank Brawley of Chicago.

A telegram from Dr. Frank E. Simpson was received, stating that on account of sickness in his family he would not be able to attend the meeting.

Recess was taken until 6:00 o'clock, when all members and invited guests reconvened in the Congregational Church, where the ladies of that church served a bountiful banquet.

After a half hour of music and toasts the audience was treated to a magnificent paper, illustrated with lantern slides, on "Mechanics and Treatment of Backache, Acute and Chronic," by Dr. P. B. Magnuson, Chicago. Forty-two members and five visitors were present.

A unanimous vote of thanks was tendered Drs. Percy, Portis, Brawley and Magnuson.

Adjourned. D. S. RAY, Secretary.

JACKSON COUNTY

The third quarterly meeting of the Jackson County Medical Society met at the Elk's Home in Carbondale, Wednesday, September 22, 1915.

The minutes of the previous meeting were read and approved. Drs. W. H. Evans and W. B. Inman of Murphysboro were received into the society as members. The program consisted of a talk on appendicitis by Dr. C. E. Riseling. Discussion by Dr. Molz, Sabine and Thompson. Also a paper by Dr. R. B. Essick on "Anesthetics." Discussion by Dr. H. C. Mitchell.

A grievance was brought to the attention of the society by Drs. Brandon and Whitacre in regard to a letter received by them from Dr. J. S. Lewis, owner and manager of the Amy Lewis Hospital at Carbondale, advising that they would be permitted to bring to the hospital and treat any medical case, but would not be permitted to do any major operations there.

A motion was made and seconded that a committee of three physicians be appointed by Dr. Brandon to investigate the case. Drs. Essick, Lightfoot and Roth were appointed to make the investigation.

Twenty-five members were present:

LOUIS R. WAYMAN, Secretary.

MADISON COUNTY

Favored by the most auspicious weather, the October meeting of the Madison County Medical Society was held in Edwardsville, October 1, and was marked by a large attendance and a sustained interest. The programs of our society are becoming more and more interesting and this one was not an exception. The subject for discussion was "Gastric and Duodenal Ulcers," and was opened by Dr. O. A. Ambrose of St. Louis, who gave us the most detailed information as to the cause of this condition. He dwelt at length upon the diagnostic indications, taking up differential diagnosis and showing that the most reliable diagnosis could be made by exclusion.

He also said that in some cases medical treatment was successful, but that it required the most rigid treatment and care extending over a period of at least a year.

Dr. Willard Bartlett of St. Louis, followed with an address on the surgical treatment of this condition giving the technique of this operation as developed by himself to the minutest detail, illustrating the procedure by large charts. He carefully classified the medical from the non-medical cases and said that patients suffering from either one of the following complications were absolutely surgical: Cases of perforation, small and repeated hemorrhages, cancer obstruction, and those cases in which medical treatment had failed.

Miss Grace Garrabrant, the community nurse lately secured by our society to make a survey of the county with reference to tuberculosis, was present and addressed the society as to the scope and manner of conducting that work in the several communities of the county. She is here for two or more months and will cover the whole county in the interest of tuberculosis prevention and is receiving the active assistance of the members of our society in the several cities and towns.

The society also allowed bills to the extent of \$67.66 for the care of tuberculous patients in the county, in various localities, by furnishing milk and hospital care, and by unanimous vote instructed the members to continue the care of such persons as are in need in making their fight against tuberculosis.

E. W. FIEGENBAUM, Secretary.

MCDONOUGH COUNTY

The McDonough County Medical Society met October 7, in the Bushnell club rooms and had a most excellent meeting. There was a large attendance and the program was excellent throughout.

Dr. H. M. Camp of Monmouth read a paper on "The Management of Abortions."

Dr. S. C. Stremmel gave an instructive lecture on the topic, "The Diagnosis of Appendicitis."

Dr. C. J. Rider presented a paper with "Hernia" as his topic.

Officers were elected as follows: President, Dr.

E. R. Miner, Macomb; vice-president, Dr. L. G. Betts, Prairie City; second vice-president, Dr. J. W. Hermetet; secretary and treasurer, Dr. Geo. S. Duntley, Bushnell; necrologist, Dr. J. B. Holmes.

Dr. Henry Knappenburger was selected as delegate to attend the meeting of the State Medical Association. Dr. Frank Russell was chosen alternate.

The next meeting of the society will be held in Macomb the first Tuesday in January.

The following resolution, which was introduced by Dr. LeMaster, will be voted upon at the next meeting:

"I, a member of the McDonough County Medical Society of the state of Illinois, do hereby recommend that the following by-law shall be added to the present by-laws of the McDonough County Medical Society:

"To-wit: That it shall be illegal and an absolute just cause for suspension of any member of this society to collect a fee for or divide any fee with any physician, or surgeon, or any other person.

"That any shift or device for evading this section shall also be just cause for the suspension from this society, or the person using such a shift or device."

McHENRY COUNTY

The annual outing meeting of the McHenry County Medical Society was called to order by the president, Dr. C. W. Goddard, at the Leonard hotel, on the shore of Crystal Lake, on Friday, July 23, 1915, at 11:00 a. m.

Dr. Chas. Worcester Hanford, Chicago representative of the Radium Chemical Company of Pittsburgh, Pa., spoke on "Some Radium Physics" and showed some of the forms of applicators by means of which the radium is handled for the therapeutic purposes, together with samples of radium-bearing ore.

Dr. Frank E. Simpson of Chicago demonstrated a series of stereopticon slides showing photographs of many cases of carcinoma, rodent ulcer, lupus erythematosus, nevi, taken before and after treatment and demonstrating the very practical usefulness of radium properly applied in selected cases.

Dr. John A. Robison of Chicago, president of the State Board of Health, was then asked to address the meeting. He said that he had noted in the minutes of the last meeting reference to medical legislation and also to the new rules of the State Board of Health for the control of communicable diseases. In regard to the former, he stated that the most important new medical legislation was that relative to birth and death certificates, which places Illinois in the registration area of the United States. In regard to the latter, he said the State Board of Health is publishing, in pamphlet form, rules for the control of these dis-

eases and will be glad to send a copy to any physician on request and will also send *Illinois Health News* on request.

Dr. Howard D. Eaton of Harvard was elected to membership.

The meeting was then adjourned. Fourteen members were present.

Regular Meeting, September 9, 1915

The September 9, 1915, meeting of the McHenry County Medical Society was called to order by the president, Dr. C. W. Goddard, in Osmond's Hall, Richmond, Ill., at 11:00 o'clock a. m. Present were the speaker, Dr. A. M. Corwin, of the publicity department of the Chicago Department of Health; Dr. and Mrs. B. J. Bill of Genoa Junction, and eleven members.

The minutes of the previous meeting were read by the secretary and approved.

The following resolution was then formally adopted:

"Whereas, at our meeting at Crystal Lake, June 18, 1914, a resolution was passed condemning the practice of doing work for lodges, etc., at less than the regular rates; and

Whereas, we are informed by a deputy of a lodge that examinations are being made by this lodge in Harvard at less than the rate called for in the fee-bill; be it

Resolved, that we again condemn this practice, calling attention to the penalty attaching thereto; and that this resolution be incorporated in the proceedings of the meetings which are sent to each and every member.

A motion was then duly made, seconded and carried that a letter relative to the subject matter of this resolution be sent to each member of the profession in the county.

By a vote of the society, it was decided that the next two meetings be held at Hebron and Marengo in the order named, while the roads are yet good, these towns being difficult of access by rail.

Dr. A. M. Corwin then discussed the "Infectiousness of Colds," in a talk than which the society has listened to none more practical nor interesting.

The meeting then adjourned to the hotel, where the usual chicken dinner was served.

N. L. SEELYE, M. D., Secretary.

ROCK ISLAND COUNTY

The regular bi-monthly meeting of the Rock Island County Medical Society was held October 12, 1915, at the new Harper hotel, Rock Island. After a dinner, at which twenty-six participated, the business session was held. Drs. E. A. Anderson and T. C. Walsh of Rock Island, and Dr. J. D. McKelvey of Moline, were elected to membership in the society. The names of Drs. Frank Davenport and P. L. Pearsall of Moline were proposed for membership.

An amendment to the by-laws limiting member-

ship to those who have practiced one or more years in this county was passed.

The following interesting and instructive program was presented:

"Interesting Facts in Ancient Therapeutics," Ralph Dart, Rock Island.

"Syphilis of the Heart and Aorta," W. H. Rendleman, Davenport.

"Demonstration of Lungmotor," C. T. Foster, Rock Island.

Dr. Rendleman illustrated his paper with many excellent original skiagrams. He was tendered a vote of thanks by the society. Thirty-two members and four visitors attended this meeting.

A. E. WILLIAMS, Secretary.

WINNEBAGO COUNTY

The Winnebago County Medical Society and the local dental society held a joint meeting at the Nelson hotel, Rockford, on Tuesday evening, October 12. Preceding the special program, a banquet previously arranged for by the dental society was served to all present. The number of dentists and doctors seated around the tables was eighty-four.

At 8:30 Dr. Starkey called the societies to order. Late arrivals had increased the attendance to about 120. Visitors were present from Beloit, Freeport, Belvidere and Elgin.

Dr. Frank Billings of Chicago was introduced by Dr. Starkey and spoke on the subject of "Focal Infections and Their Relation to General Diseases." Lantern slides were used to illustrate his talk. The principal facts brought out by Dr. Billings were as follows:

1. Transmutation of bacteria of one variety into a wholly different variety and back again, the bacteria passing through different strains while being grown or while passing through another animal.

2. The affinity of bacteria for special tissues.

3. The unscrupulous use of stock or shot-gun vaccines should be avoided; bacterial vaccines of a certain strain only should be used.

Dr. Weld of Belvidere introduced Dr. Frederick Morehead, D. D. S., of Chicago, as the next speaker. Dr. Morehead spoke on "The Teeth in Relation to General Diseases." Lantern slides were again used. The emphatic points brought out were: 1. Whenever possible x-ray pictures of all the teeth should be taken with proper precautions as to site of rays and density of bone. 2. Not to try to save the molars when the periodontal membrane was destroyed. 3. The saving of anterior teeth might be done by surgical removal of apices of teeth and curetting area. 4. Better mechanical dentistry should be done to counteract against general disease. Be careful about pulling too many teeth at one sitting.

Both speakers were warmly applauded. The meeting was then adjourned.

DR. C. M. RANSEEN, Secretary.

Personals

Dr. J. H. Riley, DeKalb, is reported to be seriously ill.

Dr. and Mrs. Frederick E. Tulley, Granite City, have returned after a summer spent on the Pacific coast.

Dr. Anthony Balcerzak, Chicago, has been elected chief medical examiner of the Polish National Alliance.

Dr. and Mrs. Arnold C. Klebs, Switzerland, formerly of Chicago, will spend the winter in Washington, D. C.

Dr. George A. Zeller, Peoria, alienist of the state board of administration, has been appointed a member of the board.

Dr. I. M. Miller, Chicago, has removed to Kewanee, Ill., and will limit his practice to the eye, ear, nose and throat.

Dr. Matilda O. Ennis of 11221 Forrestville avenue, Chicago, has removed to 1336 Los Palmas ave., Los Angeles, California.

Dr. and Mrs. Chas. Adams have returned to Chicago after an absence of two years in Hawaii, the West Indies and Central America.

Dr. Edward Bollinger has been appointed resident surgeon for the Missouri Pacific, Iron Mountain & Southern Railway Company at Dupon.

Dr. William S. White was operated on at the Evanston Hospital, October 8, for appendicitis and the removal of gallstones, and is reported to be improving.

Dr. Evarts A. Graham, assistant professor of surgery at Rush Medical College, has located at Mason City, Iowa, and has been appointed chief surgeon to the Park Hospital.

Drs. Albrecht Heym, Sidney Kuh and George W. Hall have been appointed members of the attending staff of the Psychopathic Hospital, connected with Cook County Hospital.

Dr. Harry L. Kampen has been elected president; Dr. Ralph Graham, vice-president and Dr. Charles P. Blair, secretary-treasurer of the medical staff of the Monmouth Hospital.

Dr. Reinhard Rembe, Chicago, is reported to have been decorated with the Iron Cross by the German emperor. Dr. Rembe has been in service with the German army since the outbreak of the war.

News Notes

—The Twentieth State Conference of Charities and Correction was held in Danville, October 23 to 26, under the presidency of Dr. George T. Palmer, Springfield.

—The Illinois Association of County Home Superintendents and Illinois Probation Officers Association held their annual sessions in Danville, October 22 and 23.

—The meeting of the Aesculapian Society of the Wabash Valley at Paris, was postponed a week, to November 4, on account of the funeral of Dr. Isaac L. Firebaugh of Robinson.

—Dr. Patrick M. Kelly, superintendent of the Kankakee State Hospital, ordered that all the employees and patients in the institution, nearly 4,000 in number, be inoculated against typhoid fever.

—The seventh annual meeting of the Illinois Association for the Prevention of Tuberculosis was held in Danville, October 23, in conjunction with the meeting of the state conference of charities.

—The council of the Chicago Medical Society passed resolutions of sympathy for Dr. Robert B. Preble at its meeting October 12. Mrs. Preble and her mother lost their lives in a fire in his residence October 6.

—The advisory attending staff of the Chicago Psychopathic Hospital, after an investigation of the needs of the institution, recommended that more beds are needed and that the hospital shall be so arranged that patients can be segregated according to their diseases.

—The sixteenth meeting of the Robert Koch Society for the Study of Tuberculosis, Chicago, was held at noon, October 18, at the City Club, Chicago, when Dr. Francis M. Pottenger, Monrovia, Calif., gave an address on "The Diagnosis of Tuberculosis by Palpation."

—Dr. Francis M. Pottenger, Monrovia, Calif., gave a clinic and demonstration in the amphitheater of Rush Medical College, October 16, on "Tuberculosis," under the auspices of the Rush Medical College Ambulatorium of the Chicago Municipal Tuberculosis Sanatorium.

—The council of the Chicago Medical Society, as the result of the arrest and holding in jail

over night of a respected member of the profession for an alleged infraction of the Anti-narcotic Law, passed resolutions placing the society on record as in sympathy with the proper enforcement of the law, and calling on the district attorney and chief of police not to serve warrants against members of the profession, under this law, except between the hours of 9 a. m. and 4 p. m., when courts are in session, so as to give an opportunity for furnishing bail. In the case above mentioned, the physician was promptly discharged from custody by the United States commissioner upon a statement of the case.

—At a meeting of the Chicago Physicians' Club, October 19, the subject for discussion was, "Our Jails and Other Penal Institutions." Judge Jacob H. Hopkins of the Municipal court presided. From his remarks it became quickly evident that not only the jails but even some of the court rooms in Chicago were in an intolerable condition. Mr. John L. Whitman, superintendent of the House of Correction, whose progressive ideas of prison management have made an appeal to the manhood of many hardened prisoners and caused many to reform, related in some detail his efforts to improve the conditions. Emory Sanford Hall, architect, talked on ideals of prison construction. Miss Harriet Vittum, civic director of the Woman's City Club, who has made a personal survey of numerous prisons, both in this country and abroad, said that with few exceptions Chicago's jails are a disgrace hardly to be equalled outside of Turkey. She appealed to the profession to use its influence for legislation and funds to place Chicago in the class of civilized communities.

Marriages

JAMES FRANCIS COX, M. D., to Miss Elizabeth Wise, both of Chicago, September 11.

VERNON C. DAVID, M. D., Chicago, to Miss Marguerite Record of Minneapolis, October 16.

HARRY PIERCE REUSS, M. D., Granite City, Ill., to Miss Ruth Hill of East St. Louis, Ill., October 5.

CHARLES E. S:SSON, M. D., to Miss Bertha E. Vollman, both of Elgin, Ill., at Los Angeles, September 1.

RUSSELL ADAMS SCOTT, M. D., Evanston, Ill., to Miss Julia Beauchamp Hinkle of Hawesville, Ky., October 14.

CLARENCE VERNON SMITH, M. D., Tipton, Ind., to CHRISTINE LUKAS, M. D., of Evanston, Ill., September 8.

FRANK CHALMERS McC:LANAHAN, M. D., Viola, Ill., a medical missionary to Egypt, to Miss Helen Smith of Waverly, Ohio, September 15.

Deaths

PAYTON CHESTER MADISON, M. D. College of Physicians and Surgeons, Chicago, 1893; aged 52; died October 1, from heart disease.

CHARLES B. ROBERTS, M. D. Ensworth Medical College, St. Joseph, Mo., 1890; died at his home in Towanda, Ill., September 21, from heart disease.

JOHN SCHNEE THOMPSON, M. D. Rush Medical College, 1873; aged 68; died at his home in Palestine, Ill., July 12, from hemorrhage of the stomach.

CARL N. McCASLIN, M. D. Medical College of Indiana, Indianapolis, 1902; aged 39; of Earl Park, Ind.; died in the Washington Park Hospital, Chicago, September 17, from peritonitis.

GEORGE W. COMBS, M. D. Cincinnati College of Medicine and Surgery, 1879; aged 77; a member of the Illinois State Medical Society; died at his home in Ridgway, Ill., July 2, from endocarditis.

M. M. WELSH, M. D. Keokuk, Iowa, Medical College, 1896; aged 52; a member of the Illinois State Medical Society; died at his home in Odell, Ill., September 28, from pneumonia complicating typhoid fever.

CLAUDE EARL BUCHER, M. D. Northwestern University Medical School, Chicago, 1912; aged 32; of Williamsville, Ill.; was killed October 5 by the overturning of his automobile while responding to a professional call.

PEARL TINKLER, M. D. Barnes Medical College, St. Louis, 1911; aged 26; of Taylorsville, Ill.; formerly a Fellow of the American Medical Association; died in the Baptist Hospital, St. Louis, August 9, from septicemia.

FRANK LEWIS PEIRO, M. D. University of Vermont, Burlington, 1866; aged 76; for more than forty years a practitioner of Chicago; a veteran of the Civil war; died at the home of his daughter in Evanston, Ill., October 12.

JOHN G. MCGUIRE, M. D. Jefferson Medical College, 1861; aged 88; until 1895, a practitioner and druggist of Anamosa and Mechanicsville, Iowa; died at the home of his son in Chicago, September 5, from cerebral hemorrhage.

CAMERON CHAMBERLIN, M. D. Medical College of Indiana, Indianapolis, 1902; aged 36; a Fellow of the American Medical Association; a well-known practitioner of Indianapolis; died in the Presbyterian Hospital, Chicago, October 4, from spinal meningitis.

JACOB MILTON BOSART, M. D. Medical College of Ohio, Cincinnati, 1858; Miami Medical College, Cincinnati, 1867; aged 81; died July 16, from malignant prostatitis, at the home of his daughter in Sumner, Ill., where he had resided for fifty-seven years.

BYRON C. ELMS, M. D. Chicago Homeopathic Medical College, 1880; formerly a member of the Nebraska State Medical Association; a practitioner of Chadron, Neb., until 1912, and since that time a resident of Chicago; died at his home in Chicago, September 9.

FRED JULIUS PARKHURST, M. D. Northwestern University Medical School, Chicago, 1880; aged 60; a Fellow of the American Medical Association; a director of the First National Bank of Danvers, Ill.; a prominent practitioner of McLean county; died at his home in Danvers, September 4.

BENJAMIN F. HALL, M. D. Louisville Medical College, 1877; aged 61; who practiced in Rock Island since 1894, giving special attention to diseases of the eye, ear, nose and throat; held in high professional and personal esteem; died after several years' illness from pernicious anemia, October 17.

ISAAC L. FIREBAUGH, M. D. Miami Medical College, Cincinnati, 1875; member of the Illinois State Medical Society; a Fellow of the American Medical Association; member of the Aesculapian Society of the Wabash Valley; an old and honored member of the Crawford County Medical Society, of Robinson, Ill., died October 25.

Book Notices

DISEASES OF THE NOSE AND THROAT. By Algernon Coolidge, M. D., Professor of Laryngology in the Harvard Medical School. 12mo. of 360 pages, illustrated. Philadelphia and London: W. B. Saunders Company, 1915. Cloth, \$1.50 net.

This little book is especially adapted to the use of the student. Various methods of examining the throat and nasal cavities are described in an admirable way and are unusually clear.

The diagnoses of various conditions are considered as fully as the size of the book will permit, and treatment given accordingly. Established facts are emphasized, while the text is brief. The book will form an admirable guide for students and for clinical work.

MARIE TARNOWSKA, by A. Vivanti Chartres, with an introductory letter by Professor L. M. Bossi of the University of Genoa. Published by the Century Company, New York, MCMXV. Price, \$1.50 net.

From a medical standpoint, the story of the life of Marie Tarnowska is interesting. The book was written, not as a plea for clemency, for Marie Tarnowska has paid the penalty exacted by the law of Italy, not in extenuation of her crime—if crime she committed—but was written rather to present the physiological and psychological elements, which the court did not take cognizance of.

The book does not seek to make Marie Tarnowska better than she is—in fact, we surmise it has painted her character and actions rather black—but it does show the life she was thrown into and from which she could not escape, although at various times she tried, and the added results of disease and drug addictions, as they had to do with her mental weaknesses, her enforced criminal complications and final punishment.

The book is really a plea to the layman for more intelligent interpretation and treatment of offending individuals who are not responsible because of disease, mental morbidity, and drug addictions.

The book was written at the suggestion of Prof. L. M. Bossi, of the University of Genoa, the Italian alienist and gynecologist, and is the story of the entire life of Marie Tarnowska, told by that unhappy lady to Mrs. Anne Vivanti Chartres, the author who has published the story as related to her.

PRINCIPLES AND PRACTICE OF OBSTETRICS, New (2nd) edition, thoroughly revised.

PRINCIPLES AND PRACTICE OF OBSTETRICS. By Joseph B. De Lee, A. M., M. D. Professor of Obstetrics at the Northwestern University Medical School. Second edition, thoroughly revised. Large octavo of 1,087 pages, with 938 illustrations, 175 of them in colors. Philadelphia and Lon-

don: W. B. Saunders Company, 1915. Cloth, \$8.00 net; half morocco, \$9.50 net.

De Lee's work on obstetrics is now so well known in America that little need be said concerning it. Four printings were necessary to supply the demand for the first edition. In this second edition (August, 1915), the chapters on Abderhalden pregnancy reaction, on "Twilight Sleep," on dry labor, labor in old primiparae, blood pressure, and extraperitoneal cesarean section have been very materially enlarged.

The work was written primarily as a text-book, but perhaps more nearly fills the needs of the general practitioner than any other American texts on obstetrics.

The volume is so large and covers the obstetrical teaching so completely, that a creditable review would be too lengthy for our space.

One must not pass, however, without mention of the nine hundred thirty-eight illustrations, one hundred seventy-five being in colors. Some of these are photographs, others drawings—excellent ones—and a few others are diagrams.

Two sizes of type are used—much of the detail being in small type—so that the work might be contained in one volume.

Every practitioner should possess a copy of this work, and no medical library is complete without it.

REPORT OF THE BUREAU OF HEALTH FOR THE PHILIPPINE ISLANDS for the fiscal year from January 1 to December 31, 1914. Victor G. Heiser, M. D., Director of Health, Surgeon, United States Public Health Service. Manila Bureau of Printing, 1915.

THE UNIVERSITY OF THE PHILIPPINES, COLLEGE OF MEDICINE AND SURGERY, including the Department of Dentistry, the Graduate School of Tropical Medicine and Public Health, and the School Pharmacy. Ninth Annual Announcement and Catalogue. Reprint from the Bulletin No. 5. Manila Bureau of Printing, 1915.

QUARTERLY REPORT OF BUREAU OF HEALTH FOR THE PHILIPPINE ISLANDS. First quarter, 1915. To the Secretary of the Interior. J. D. Long, M. D., Director of Health, Surgeon, United States Public Health Service. Manila Bureau of Printing, 1915.

"SENESCENCE AND REJUVENESCENCE." By Charles Manning Child, Ph. D., Associate Professor of Zoology in the University of Chicago. XII + 492 pages, 8 vo., cloth. Price, \$4.00; postage extra (weight 3 lbs.). The University of Chicago Press, Chicago, Illinois.

The author has taken up this subject in a thoroughly scientific way and has given the fruits of his labor in this volume. The problem is a most difficult one, on which the author has done an enormous amount of original work.

It is a most interesting subject, treating, as it does, with the process of growing old and making young again. Whether the aged human can ever be made young again is questionable.

Some of the important questions taken up by the author are:

1. How do young and old organisms differ from each other, and what is the nature of senescence?

2. Is it a feature of the fundamental process of life or the result of incidental conditions?

3. Does it occur in all organisms or only in the more complex and highly differentiated forms?

4. Does it lead sooner or later to death or is there a rejuvenescence of old organisms or parts possible?

The book contains some two hundred figures, about half of which are illustrative of the author's own experiments.

WHAT TO EAT AND WHY. By G. Carroll Smith, M. D., of Boston, Mass. Second edition, thoroughly revised. Octavo of 377 pages. Philadelphia and London: W. B. Saunders Company, 1915. Cloth, \$2.50 net.

This excellent work appears in its second edition, with considerable revision and new matter added. Changes in our conception of rheumatism have caused a new chapter to be written. It is not a complete book on dietetics, but for one who wishes to know what to give and why, in the more important diseases, it will thoroughly fulfill its function.

DISEASES OF THE SKIN AND THE ERUPTIVE FEVERS. By Jay Frank Schamberg, M. D., Professor of Dermatology and Infectious Eruptive Diseases in the Philadelphia Polyclinic and College for Graduates in Medicine. Third edition, revised. Octavo of 585 pages, 248 illustrations. Philadelphia and London: W. B. Saunders Company, 1915. Cloth, \$3.00 net.

The name of the author is evidence enough of the excellence of this work. It is exceptionally well illustrated in black and white, and the subject amply covered. New matter is observed throughout this edition, likewise considerable revision. The chapters on syphilis, test and treatment, have been brought up to date, and a chapter on Rocky Mountain Spotted Fever added. It is a book intended for the student and practicing physician.

A TEXT-BOOK OF PATHOLOGY. By Alfred Stengel, M. D., Professor of Medicine, University of Pennsylvania, and Herbert Fox, M. D., Director of the Pepper Laboratory of Clinical Medicine, University of Pennsylvania. Sixth Edition, Reset. Octavo of 1,045 pages, with 468 text-illustrations, many in colors, and 15 colored plates. Philadelphia and London: W. B. Saunders Company, 1915. Cloth, \$6.00 net, half Morocco, \$7.50 net.

The fact that a sixth edition is before us gives evidence of its popularity as a standard text-book of pathology. It is noted that many changes have appeared, notably the addition of a new section on transmissible diseases and the terata. The glands of internal secretion have been made the subject of a separate chapter, which is timely, keeping pace with the great amount of work done in this branch of medicine. It is noted that wherever changes were necessary to make this a modern text-book, complete revision was done. For students and physicians needing a text-book Stengel can be recommended.

ILLINOIS MEDICAL JOURNAL

THE OFFICIAL ORGAN OF
THE ILLINOIS STATE MEDICAL SOCIETY

VOL. XXVIII

CHICAGO, ILL., DECEMBER, 1915

No. 6

Original Articles

DIPHTHERIA TREATMENT IN GENERAL PRACTICE.*

R. RALPH FERGUSON, M. D., CHICAGO.

President Chicago Medical Society Milk Commission.

My subject for discussion tonight requires no apology since the results of the proper administration of diphtheria antitoxin represent one of the greatest achievements of mankind, namely: the cure of a most fatal and dreaded disease. And since there is at present no method by which we may always decide even the approximate dosage of antitoxin to be administered in a given case, it is my privilege to open this intensely important subject for discussion here tonight, and in so doing I desire to discuss this question of proper dosage from a practical clinical standpoint, as well as from a strictly scientific standpoint.

I take it for granted that every member of this branch is a believer in and a user of the serum treatment for diphtheria, therefore it is unnecessary for me to take up your time in proving its value, although we see an occasional so-called Doctor of Medicine, who does not believe in antitoxin. It is my firm conviction that such treatment, or rather lack of treatment of a patient at the present time would afford good evidence of malpractice.

In my opinion there are but one or two textbooks on the market at the present time, which advocate sufficient antitoxin to save a desperate case of diphtheria. In McCollom's classical work in Osler's system we find him advocating eight to ten thousand units where extensive membrane is seen.

Holt advocates 3,000-15,000; Tyson's Practice of Medicine, 1,000-2,000; Roteh, 3,000-4,000;

Ballinger, 2,000-4,000; Shaw and La Fétra, 1,000-3,000 and so forth on down the list.

That there are by far too many deaths from diphtheria, both in and out of our hospitals goes without saying. At the same time permit me to state that if the proper procedure were understood and instituted as quickly as the disease is recognized, whether it be the first or the sixth day of the disease, more lives could undoubtedly be saved than is the case at the present time, and if this paper makes you think that larger doses of antitoxin mean safety to your exposed patients and a fighting chance to your seemingly hopeless cases, it will have accomplished its purpose.

In studying the literature of the past twenty years, that is since 1894, when Behring first introduced antitoxin to the world, as the cure for diphtheria, it is interesting to note that the dosage has gradually risen from two or three hundred units in a given case to several hundred thousand units in another given case, and in analyzing this statement we find the following three important reasons for this gradual change in dosage.

1. That in the beginning when antitoxin was a new laboratory product, the dosage was exceedingly small—three or four hundred units, for the reason that the supply was very limited, and the cost of larger doses was almost prohibitive.

2. Through larger experience the demand for larger doses increased until in 1903, ten years after its introduction into this country, five to eight thousand units seemed to be the proper dose, with a consequent lowering of the cost of antitoxin and also a lowering of the death rate.

3. That in recent years the dosage of antitoxin has risen still higher until today many men consider twenty thousand a very conservative minimum dose, while others use hundreds of thousands of units as a maximum dose.

To be more specific in my statements let us

*Read before the North Shore Branch, Chicago Medical Society, May 4, 1915.

study the work done by some of our greatest authorities on the subject—men who have treated hundreds of thousands of these cases and have recorded their results for the benefit of others:

W. H. Park of New York for one, McCollom of Boston and others to be mentioned.

In his memorable address delivered at Harvard Medical School in 1912 on "Antitoxin Administration," Park states that the deaths from diphtheria have gradually diminished since the introduction of antitoxin—not only of those attacked by diphtheria, but by the actual worldwide diminution of the total number of cases. This latter result, of course, being due to immunization. He then lays before us some important data relative to the use of antitoxin in its early administration in Boston and New York. Before the use of antitoxin New York in each 100,000 of population had a few more deaths than Boston, but with the introduction of antitoxin the improvement was more rapid in New York than in Boston for the reason that New York distributed free antitoxin earlier than Boston, which, of course, meant larger doses. However, when Boston began the distribution of free antitoxin, New York lost her lead, and has never regained it. Perhaps the reason for this is that the men in Boston always give larger doses than the men in New York.

Fourteen years ago Park's work led him to formulate the following table:

Very mild cases, 1,000-1,500; moderately severe, 2,000-3,000; very severe, 4,000-5,000. Since that time he has doubled these doses and his conclusions last year were as follows:

Beyond 25,000 units in a child and 50,000 in the adult are absolutely unnecessary and useless, and that an initial dose of 10,000 for a child and 20,000 for an adult is probably sufficient for the whole course of the disease. In other words Park thinks we should give in the first dose all that we think is necessary for the entire course of the disease, and if we have to give a second dose we have misjudged the amount necessary, and yet he emphasizes two important points as follows:

1. Large doses do no harm; but insufficient first doses may cost the life of your patient. The great advantage in giving sufficient antitoxin in the first dose, 20,000 in single and in divided doses, act as follows:

It is only at the end of the third day that 20,000 in divided doses equals in effect the single dose of 15,000, with but 1-3 the effect on first day.

At the Willard Parker Hospital they are practically eliminating the second dose, and the results seem as good as at Kingston Avenue Hospital, where the same size initial dose is repeated in later doses. "Keep in mind that we give one thousand times as much antitoxin as is required for the amount of toxin in the case. The great excess is for the purpose of pushing it out into the tissue fluids of the diseased parts and wherever toxin may have passed."

"In malignant cases we always give antitoxin intravenously because at the end of six hours we have the following amounts of antitoxin in the blood, subcutaneous, two units; intravenously, twenty units."

Park feels certain that 5,000 units given intravenously gives as much effect as 20,000 subcutaneously. In all septic cases the intravenous method is used.

John H. McCollom of Boston gives the following data for Boston:

1896 death rate was 14 per cent.

1905 death rate was 9.5 per cent.

This reduction was because of the administration of larger doses of antitoxin to patients apparently moribund, and if all cases dying in the first 24 hours are examined the death rate is 6.95 per cent.

McCollom further states that, "It seems to me that no patient ill with diphtheria, unless actually moribund, should be considered in a hopeless state, for I have seen in the past nine years (prior to 1905) too many patients apparently moribund, recover after very large doses of antitoxin." This assertion is not based on theoretical grounds, but is the result of personal experience at the bedside of the patients. Even in intubation cases when the tube becomes clogged with a thick, tenacious mucus and it is evident that the diphtheritic process is extending to the bronchi, large doses of 20-30 or 40,000 units will give positive benefit; and no harm to the patient.

McCollom with his great experience states that the dosage of antitoxin must be graded by experience as no laboratory methods yet known are of much practical help; that age (over 2 years), has little or nothing to do with the grading of

the dosage for it is a chemical action and not entirely a physiological one. Therefore there is no reason to doubt that a young child should receive as many antitoxin units as an adult.

Before going further let us study for a moment what is expected of the antitoxin when it is introduced into the body of a patient. We have good reasons for believing, as Park states, that an immediate neutralization of the toxin that is circulating in the blood stream occurs and soon afterwards of that in the tissue fluids. We also have reason to believe that in some degree the poison which, by absorption has attached itself to the cells may be modified.

Kraus in 1912 states that cells which have taken up toxin will give it up if they are placed in fluid free of toxin; and that this occurs more freely if the fluid around them is antitoxic. We therefore have every reason for believing that we may remove from the cells part of the toxin, which has recently been taken up. Therefore as quickly as possible we must get enough antitoxin into the blood to neutralize any toxin present there so that no further toxin is able to pass out to the tissue cells. We also press the antitoxin out into the tissue fluids, and here let us remember that the protein antitoxin passes through capillary walls much more slowly than do the water and salts. Antitoxin absorption is a slow process. This fact speaks volumes for large initial doses. Size of patient is another important factor in deciding the proper dosage. As children are more susceptible to diphtheria than adults and are in more danger, we must consider this element also, and give them more than their size would seem to warrant. Large doses do not harm, but a small initial dose is absolutely dangerous.

Boston is the city where the largest doses of antitoxin are given and their death rate is the lowest.

Light cases—6,000-10,000.

Moderate—10,000. Repeat 6 to 8 hours.

Severe—20-30,000. Repeat 6 to 8 hours.

Moribund—50,000 to 300,000.

In the great majority of cases, subcutaneous method best and age disregarded.

Philadelphia Municipal Laboratory one-half these doses, but not as low as death rate.

Koplik in New York often gives 200,000 in desperate cases.

Baginsky of Germany, maximum, 6,000.

Fee of Heidelberg gives around 10,000.

Hutinel of Paris regulates dose by age and weight.

Ker of Edinburgh by intensity of the disease.

Place advises getting all necessary antitoxin into system during first three days of treatment, even if 500,000 units are necessary (desperate).

Joseph Green of Asheville, N. C., 10-20-40,000, repeating if necessary.

Boston City Hospital, 1888-1894, no antitoxin; deaths 43 per cent; 1895-1904, antitoxin doses small, deaths 11.48 per cent; 1912, large doses antitoxin, deaths only 7.6 per cent.

C. Schöne, Leipsic. Conclusions from long series of cases: Intravenous injection of antitoxin, even in large doses, is not harmful, and that many cases of septic diphtheria may be saved by using large doses intravenously.

Lund of Moscow, mild, 5,500, repeated often; moderate, 20,000, repeated if necessary; severe, 50,000, repeated if necessary.

E. B. Gunson, in *British Journal of Children's Diseases*, advocates mild, 8,000; moderate, 12-16,000; severe, 16-20,000; repeat twice daily.

In studying the proper dosage Ehrlich has contributed considerable light on the subject in giving us some theories on the subject of toxin.

Ehrlich says two poisons are produced by the growth and multiplication of the diphtheria bacilli. One he calls toxin, the other he calls toxon. To the former, or toxin, he attributes the early acute symptoms and to the latter, the toxon element, he attributes the late paralyses. The affinity is stronger between the toxin and the antitoxin, than between the toxon and the antitoxin; hence the importance of having a surplus of antitoxin to neutralize the toxon element after the toxin has been chemically disposed of. This certainly speaks for large doses of antitoxin.

Von Behring believes diphtheria is on the increase as opposed to Park's views, but is confident that there is a normal standard of susceptibility, which will soon be discovered, which will enable us to apply the exact dosage to all individuals whether for immunization or for curative purposes.

Until that time arrives we must depend upon judgment and experience as to the proper dosage of antitoxin.

C. Schöne concludes from a long series of

intravenous injections of antitoxin that very large doses have no harmful effects and that by their use many patients with severe infection can be saved that would die with smaller doses, particularly if antitoxin is not given early.

Rosenau's conclusions may be summed up as follows, referring especially to the post diphtheritic paralysis:

1. Antitoxin cannot influence the diphtheria paralysis after the paralysis has occurred.
2. Has no influence in preventing post-diphtheritic paralysis if injected only shortly before the paralysis developed.
3. Given later in disease saves life and greatly modifies the paralysis.
4. A single large dose, 400,000, will not stop paralysis.
5. Repeated large injections seem to have a more favorable effect upon the subsequent paralysis than a single large injection.
6. An immunizing dose of antitoxin, even if diphtheria is inaugurated later protects from paralysis.
7. Use early.

Schick, Kassowitz and Busacchi, working separately recommend the following:

1. Injection given as early as possible.
2. Give all intramuscularly.
3. Mild and medium cases (90 per cent. of all cases), a single dose graded by weight entirely; 46 units per pound weight.
4. In severe cases 230 units per pound weight.
5. All these men think that repeated doses of antitoxin are unnecessary. That enough may be given in the first dose to cure.
6. For immunization, 25 units per pound.

Samuel S. Woody of Philadelphia in the *Journal A. M. A.*, has summarized the antitoxin treatment about as follows:

1. No case of diphtheria, however mild, should receive less than 10,000 units.
2. When both tonsils are well covered with exudate of one or two days duration 30,000 to 60,000 units.
3. Both tonsils well covered with exudate, with palate, uvula and nose involved, of three days duration, 150,000 to 300,000 units.

These doses are not repeated, but are for the entire course of the disease.

RESULTS.

Since there is no bar to large doses Woody's summary is as follows:

1. Prompt local cure.
2. Quick improvement in the patient's general condition.
3. Avoidance of complications.
4. Reduction of mortality.
5. Larger doses than the above may be necessary in some cases with positive benefit.

Before summarizing the results of my study of these valuable papers, permit me to briefly give a few case records, which have occurred in my own practice during the past two years, illustrating the value of large doses of antitoxin. No case is here reported which received under 100,000 units, therefore all were of the severe type, some even moribund.

Case 1. Five-year-old girl, laryngeal type—seen on fourth day. Septic prostration profound.

Initial dose 40,000 repeated every 8 hours until 175,000 units were given, all in less than 60 hours. Complete recovery.

Cases 2-3-4-5. Boy, 8; girl, 11; (boy, 9 years; baby, 9 months left out of series as baby received 20,000 as curative dose.) Boy, 10,000 prophylactic.

Boy, 8, moribund on my first visit, which was on the 6th or 7th day of the disease. Died before the end of 24 hours and received only 75,000 units of antitoxin, as I could get no more free antitoxin in Chicago.

Girl, 11, sister, probably contracted disease about 12 hours after boy. In next 60 hours, even though the uvula and soft palate and vocal cords were partly gangrenous and sloughing, she received 150,000 and recovery was complete.

Cases 6-7-8-9, all in same family. Oldest two received about 50,000 each with complete recovery but are left out of this series.

Of the other two, girl, 6 years, in 60 hours received about 100,000 units; recovery complete.

Girl, 5 years, in 60 hours received about 120,000 units with complete recovery.

Cases 10-11-12-13-14. Of this series, first case was a boy aged 17 years, who brought diphtheria into the house and received no antitoxin since he had recovered when first seen, but was left with a severe nephritis.

Cases 2 and 3 were two girls, 10 and 17, who recovered with 40,000 and 30,000, respectively, but which are not counted. Case 4 was the mother of the family, age 44, having contracted the disease from the older boy. I saw her on the 8th day of the disease. Membrane not only on tonsils and pharynx, in larynx, but on roof of mouth, on the cheeks, tongue and lips. Cellulitis intense and patient practically moribund. During the next 60 hours I administered 260,000 units, in desperation, more than in hope of saving a life. Improvement, slow of course, followed, and although it was over 6 months before recovery was complete,

having bad cardiac complications, paralysis of both legs and of both forearms and hands, not to mention the eyes and pharynx. Today, nine months after the disease, she is apparently in fairly good health. The last in this family was a boy of 8, who contracted the disease from his mother and was almost moribund on my first visit. In the next 60 hours he received 100,000 units and went on to complete recovery.

My conclusions based on a careful study of the literature and upon an analysis of all the desperate cases I have treated in my own practice leads me to the following conclusions:

1. That nine practitioners out of ten do not give antitoxin in sufficiently large doses, especially in the severe cases.

2. That no case of diphtheria should ever receive less than 10,000 units of antitoxin, however mild the case may seem.

3. That moderately severe cases should receive the maximum dose at the first injection. If our judgment of the maximum dose is good no more antitoxin will be necessary, but if our judgment is bad repeated doses are necessary, and by the maximum dose I mean 100,000 units or more—never less.

4. That all moribund cases should receive during the first 24 hours of treatment, as a minimum dose, 150,000 units. That, should our judgment call for a second or a third dose the administration should be completed by the end of 48 hours—in every case by the end of 60 hours.

5. That, when practical, all moribund cases should receive their antitoxin intravenously and in somewhat smaller doses than when given otherwise, since the antitoxin takes effect many hours sooner.

6. That every case of diphtheria, even though it be moribund, has a fighting chance for recovery, providing the patient is alive at the end of 24 hours after first having been seen, whether on the third or the eighth day of the disease and providing further that during that first 24 hours of treatment the patient has received not less than 150,000 units of antitoxin.

That at the end of the second day, if the patient is alive and receives another 100,000 units or more during that day his chances for recovery are much better. That if he is alive at the end of 60 or 72 hours his chances for recovery are good.

7. That all complications are decreased or less severe when large doses are given, than when

barely enough antitoxin is given to save your patient.

8. That during eleven years of practice, in which time I have consistently used large doses of antitoxin no case of diphtheria has ever died from the later complications and no case has ever died, who lived for 24 hours after first having been seen.

9. That the diphtheria death-rate for Chicago was 31.9 per 100,000 population in 1914. That antitoxin is furnished free to everybody by the grand state of Illinois and that the death-rate should be reduced to at least 20 per 100,000 by a united effort of the medical profession of Chicago during the next five years.

Irving Park, Chicago.

THE VALUE AND LIMITATIONS OF THE SCHICK DIPHTHERIA REACTION IN GENERAL PRACTICE.*

A. LEVINSON, M. D.,

CHICAGO.

Instructor Pediatric Department, University of Illinois College of Medicine; Attending Physician, Pediatric Department, Jewish Aid Dispensary.

For the past few years physicians who have been called upon to deal with cases of diphtheria have been confronted by two difficult problems. One of them was the determination of the susceptibility of an individual to the disease, it being a well-known fact even to the laity that some people do not contract the disease when exposed to it. The second problem was the determination of the amount of antitoxin to be administered in a given case of diphtheria.

Thanks to the efforts of Dozent Schick of the University Children's Hospital of Vienna, a solution has been found to both of these problems. While engaged in solving the problem of the dosage of antitoxin, Schick came upon the discovery that it is possible to produce a specific skin reaction in patients afflicted with diphtheria, a reaction similar to the Pirquet test in tuberculosis. Schick further found that the skin reaction produced in diphtheria patients can be suppressed if sufficient antitoxin is introduced into the patient's body to antagonize all of the toxin in the body. On further experimentation he found that the specific skin reaction will be produced only when the blood contains less than

*Read before the Jackson Park Branch, Chicago Medical Society, Nov. 11, 1915.

0.03 unit of antoxin per cubic millimeter. This find has given him a weapon with which to strike at the two puzzling questions to which physicians had been seeking an answer—namely the determination of susceptibility, and the correct dosage. Schick conceived the idea that by testing the patient's skin with diphtheria toxin we could learn whether or not the patient has sufficient antitoxin in his blood to render him immune; and secondly, when the skin reaction is suppressed in cases that originally reacted to the disease we could know when no more antitoxin was necessary. Schick worked out the details of the test in such a way that it can easily be applied by any physician.

Technique.—Diphtheria toxin, of which the minimal lethal dose for a guinea pig weighing 250 gms., has been determined, is diluted so that 0.1 c.c. of the solution equals 1/50 of the minimal lethal dose. For instance, if the minimal lethal dose is 0.005 the toxin is diluted to 1/1000. (In my work I use a dilution of 1/550.) One-tenth c.c. of the solution, containing the 1/50 minimal lethal dose (some use 2/10, the principle is the same, however), is drawn up into a tuberculin syringe, which has 100 markings (one that has 10 gradings may also be used though it is not quite so accurate). The toxin is injected intracutaneously with a very thin needle, 26 gauge, either in the region of the scapulæ or in the arm, this injection producing indentations and whitening at the area of injection.

If the patient is susceptible to diphtheria, in other words if he has not enough antitoxin in his body to represent 0.03 unit per cmm., a reaction similar to that of the Pirquet appears in 18 to 24 hours. The reaction is usually papular in character, and indurated. It lasts for several days after which a brown discoloration or desquamation remains at the point of injection. If the patient is not susceptible to the disease, that is, if his blood contains sufficient antitoxin, no reaction takes place, or, at the most, nothing more than a needle track erythema shows at the region of injection.

Value and Limitation of the Schick Test.—In estimating the value of any test two factors must be taken into consideration. The test must be specific and it must be easy of application. Let us see how the Schick test responds to these requirements. Schick as well as others who have

applied his test found it to be specific for diphtheria, that is, that only persons susceptible to diphtheria gave a positive reaction. During the last year I have had frequent occasion to do the Schick test on individuals exposed to diphtheria, and I found that those who reacted negatively to the test did not contract the disease, even though they did not receive any antitoxin. Recently Dr. Blatt and I have been trying to ascertain what effect, if any, the Schick test had on individuals susceptible to tuberculin, that is, giving a positive Pirquet. We found that many who reacted positively to the Pirquet test did not respond to the Schick, and that a great number with negative Pirquets gave a positive reaction to the Schick. The element of hypersensitiveness to general toxin, then does not enter into consideration as a general rule. In other words the Schick test is specific. All that one has to do is to obtain the toxin or ready made dilutions. There are, however, a few precautions that should be observed, foremost among which being the size of the needle used for injection. To avoid the possibility of trauma, the needle should be very small. The point should be short and sharp so that the fluid to be injected, does not run out during the introduction of the needle into the skin. The bottle containing the solution should be tightly corked and kept from the light.

It can readily be seen, then, why the Schick test would be valuable in most cases of diphtheria. Its effectiveness is, however, most marked under conditions like the following:

1. In institutions where a case of diphtheria breaks out. This test shows whether or not the other inmates of the institution need to get antitoxin. Such a procedure not only saves the expenditure of a good deal of money for antitoxin, but it also obviates the necessity of sensitizing individuals who are immune to diphtheria.

2. In assisting to diagnose cases where the culture is negative. The Schick will show whether the patient has sufficient antitoxin. If he has, the diagnosis of diphtheria is excluded. If he has not, the need of antitoxin is indicated. In this way many a puzzling diagnosis may be cleared up, at least so far as the administration of antitoxin is concerned.

3. In determining the dosage of antitoxin the patient is to receive. So long as the Schick is positive, antitoxin will be given. It is not al-

ways necessary to do a Schick in order to determine the dosage of antitoxin. Schick has worked out the average amount needed for most cases. He divides diphtheria according to its severity into three classes:

(a) Light cases, as the simple tonsillar type. In such cases he advises the administration of 50 units of antitoxin per kilogram of body weight.

(b) More severe, like pharyngeal cases, where 100 units per kilogram of weight should be given.

(c) Severe cases, such as nasal and laryngeal. In such, 500 units per kilo should be given.

And yet with all this it is not always easy to decide upon the correct dosage to be given. Where there is difficulty or doubt a Schick should be done.

With all its virtues, however, the Schick test has its limitations. The principal difficulty lies in the reading of the reaction. It is hard to tell what is to be called a positive and what a negative reaction. If it would be possible to wait several days to see whether scaling occurs the result would be certain. The reaction must, however, be read in 18 to 24 hours to be of any value. Experience with the test will do much toward lessening the effect of this drawback.

After one has interpreted 50 or more Schicks he will have little difficulty in deciding upon the character of the reaction. A control of toxin-antitoxin—that is, toxin oversaturated with antitoxin, may be used, but even that may give a false reaction to the bouillon present. A control of sterile normal salt may be used, but even with this control experience is necessary. The lack of standards compelled me to set up the following rules in interpreting the tests I did:

No test is positive unless there is induration.

The induration should measure at least 0.5x0.2 cm.

The reaction should persist at least 5 days, with, of course, changes in color. All other reactions such as needle track erythema or a light blush without induration, I would call negative.

The second drawback to the use of the Schick test in general practice is the fact that the toxin deteriorates rapidly even when kept cold. The toxin dilutions usually deteriorate at the end of two to three months. This makes it rather inconvenient for the general practitioner who is not expert in testing the potency of the toxin. It is, therefore, advisable for the physician who uses

the test to obtain fresh toxin every month or six weeks. The appearance of a precipitate in the bottle usually indicates that the toxin is impotent, and it should not be used any more.

Every test must have its limitations. It takes experience to enable one to interpret any phenomenon, clinical as well as laboratory. However, if one is aware of the limitations of the Schick test, he will have little difficulty in applying it in general practice with great benefit to himself and his patients.

30 North Michigan Boulevard.

VALUE OF SPECIFIC TREATMENT IN CROUPOUS PNEUMONIA.*

JOSEPH L. MILLER, M. D.,
CHICAGO.

On account of the extreme variations in the mortality of pneumonia great care must be exercised in the acceptance of statistical data. So many factors modify mortality that a careful analysis of statistics is always necessary. The annual mortality in any single institution may show from year to year extreme variations. Aufrecht's statistics extending over twenty-five years gave a variation in mortality from 9.8 to 25.3 per cent., and in the Cook County Hospital the mortality has been as low as 25, while two years ago it was 39 per cent. In different parts of the country the average mortality for a long series of years may show wide fluctuations. For a period of fifteen years the average mortality in Stockholm was 13.8, and during this same period in Vienna it was 23.5 per cent.

Age is perhaps one of the most important modifying factors in pneumonia mortality. Using the combined statistics of Fraenkel, Aufrecht, Sears, Larrabee and Norris, the mortality of pneumonia in children under one year of age is about 65 per cent.; from 6 to 20 years of age 7 per cent., rising then rather rapidly until at the fifth decade it reaches 34 per cent. It can, therefore, readily be seen that statistics from hospitals where a large percentage of the patients were young people could not be compared with those from an old people's home. Many of the German statistics have been collected from military hospitals where the patients range between twenty and thirty years of age—a period of comparatively low mor-

*Read before the Chicago Medical Society, Nov. 10, 1915.

tality. The mortality in the German army has been very low, 3.5 to 4 per cent., while in the U. S. Army it averages about 14 per cent.—a difference probably due to a more virulent type of the disease in this country. The termination by lysis or crisis also shows such extreme variations that this particular point cannot be used as evidence of the value of any therapeutic measure. The day upon which crisis occurs is also subject to considerable variation, as shown by the statistics of Musser and Norris covering 10,154 cases. In 40 per cent of the cases the crisis appears by the end of the sixth day and in 26 per cent. by the end of the fifth day.

A disease which shows such marked variations in mortality and duration furnishes many dangerous therapeutic pitfalls. In order to draw conclusions a carefully worked out system of controls should be used. We should make our comparison with series made up of patients of the same approximate age and walk in life, and, of course, taken through the same epidemic. Even when these precautions in selecting the controls have been observed, it is only by comparing a very large number of cases that accurate conclusions may be drawn.

Efforts at specific therapy in pneumonia date back to the time of Hippocrates, who advised bleeding. This has since at various times been revived and reached such a vogue that Bouillard in 1846 recommended the removal of two quarts of blood. Veratrin and pilocarpin both had for a period staunch defenders. Digitalis, largely due to Traube, who recommended its use in very large doses, enjoyed a considerable period of popularity. While alcohol could be scarcely hailed as a specific, twenty years ago it was considered an essential part of the treatment, while today with our present knowledge of its action it is only considered justifiable in those addicted to its use, but during a certain period many of the best men in the profession both in this country and Europe believed that it possessed a real specific action. Creosote and salicylates have both been recommended as specifics and finally quinine has perhaps been the drug of all others which for fleeting periods has been highly recommended as having specific action in pneumonia. Von Jürgeson and especially Aufrecht in Germany advocated its use, the latter furnishing some rather convincing statistics. During 1898 and 1899 he used quinine

in 15 grain doses three times per day and during these two years obtained a mortality of 7.4 per cent., while for the fifteen preceding years the average mortality in the same clinic had been 18, and the minimum mortality 9.8 per cent. This treatment was revived in this country by Galbraith, who used much larger doses, 50 to 100 grains daily. The treatment in this country never attained popularity and at the present time is little spoken of. More recently quinine and urea hydrochloride given subcutaneously has been recommended in this country by Cohen, who reported 87 cases with a mortality of 18 per cent., not especially striking and without controls. During the past year we used quinine and urea hydrochloride hypodermatically in 20-grain doses, repeating this three times in the course of twenty-four hours, for a period of three days, then giving 10 grains three times daily by mouth until recovery. All patients with pneumonia entering our service at the County Hospital during March and April received this routine treatment. We selected as controls the other five male medical services. During this period there were 163 patients with pneumonia entered the other five services with a mortality of 21.5 per cent. We had on our service and treated during this period with quinine and urea, fifty cases, with a mortality of 22 per cent., showing that at least in this series the results were negative. To illustrate how misleading statistics may be, during this same period the medical service in the same wing and floor as ours received forty patients with pneumonia, and without any special treatment had a mortality of 7.5 per cent. It can be easily seen what conclusions might have been arrived at if we had been on their service during this time.

Eiser in 1904 first reported the inhibitory effect of camphor upon pneumococci. Later Welch and Ruech were able, by previous administration of camphor, to prevent in a few instances fatal termination in white mice after a lethal dose of pneumococci. Boethneke in Ehrlich's Institute was unable to confirm these results. Later Leo and Seibert employed it in man and reported favorable results. During the Spring of 1914 we treated in the Cook County Hospital thirteen cases of pneumonia with camphorated oil as recommended by Seibert, the patient receiving twice daily 37 grains of camphor dissolved in

olive oil. The mortality on the adjacent medical service during this period was 27 per cent., our mortality on the thirteen cases was 32 per cent., a negligible difference. One point of interest was the lack of any evidence of intoxication after these very large doses of camphor, although the expired air of the patients always smelled strongly of camphor.

With the exception of one drug, which is to be mentioned later, this exhausts the more important drugs that have enjoyed the reputation of having a specific action in pneumonia. I have purposely omitted favorable statistics that might easily have been culled from the literature to support the apparently specific action of each of these drugs. However, the value of all of this group has been disproven and even the more recent additions promise soon to pass out of use.

Considering other methods of specific treatment, mention must be made of the vaccines and sera. The vaccine treatment in pneumonia never had many supporters. The special vaccine of Rosenow apparently promised favorably for a time, but judging from how infrequently it is now employed, we can probably say that the early promise of value failed of fulfillment.

The various specific sera never yielded favorable results and in recent years have been very little used. No doubt one cause of failure is the multiple strains of pneumococci responsible for pneumonia, each forming special immune bodies. Cole and his colleagues at the Rockefeller, by determining the specific strain responsible for the attack and preparing a special immune serum for this strain, have been able with certain strains of pneumococcus infection to obtain apparently favorable results. On account of its scientific accuracy this special line of work may bring forth important therapeutic results. It is too early, however, to draw any definite conclusions. The action of this serum is both bactericidal and antitoxic.

We have reserved for our final consideration the most recent chemical agent considered as a specific in pneumonia. Mention has already been made of the frequency with which quinine has been recommended as possessing a specific action in pneumonia. Morgenroth in 1911 reported some experimental work on the action of ethylhydrocuprein or optochin, a quinine derivative, on experimental pneumococcus infection in

mice. His results, since confirmed by many others, showed a marked inhibiting effect of this drug on the pneumococcus. Wright in 1912 reported marked bactericidal action on pneumococci of serum from animals receiving ethylhydrocuprein. These findings have also been confirmed and it has been definitely determined that this drug has a specific bactericidal action on the pneumococcus, both in vivo and vitro. As stated this bactericidal action is specific for the pneumococcus. Other micro-organisms, even the closely related streptococcus, is very little affected by it and so specific is this selective action that Moore has recently recommended that optochin may be used for differentiating the streptococcus from the pneumococcus. Optochin is on the market as an insoluble base and as a soluble hydrochloride. The former has been given experimentally to animals dissolved in oil and injected subcutaneously, the latter dissolved in salt solution or water and given subcutaneously or intravenously. Moore has demonstrated that dilutions of 1/1,000,000 at times and quite constantly 1/100,000 kills pneumococci, while growth is inhibited by dilution varying from 1/500,000 to 1/10,000,000 depending upon the particular culture, although Morgenroth and Moore have both shown that all strains are apparently equally susceptible. Morgenroth and others have demonstrated that in the animal body optochin is quite as effective as in the test tube as when present in the blood in dilution of 1/400,000 to 1/1,000,000 pneumococci were killed and this independent of any phagocytic action. In the course of these experiments it has been determined that ordinary quinine hydrochloride has some selective bactericidal action on the pneumococcus. This, however, is so slight that it was impossible to protect mice against pneumococcus infection even by the use of extremely large doses. For this reason we are not justified in concluding that the various salts of quinine used in the treatment of pneumonia in the past have had any specific action on the course or termination of the disease. Morgenroth reports that by the use of optochin he has been able to save 90 to 100 per cent of mice that had received a lethal dose of pneumococci, and Moore in a total of eighty-two mice receiving one-hundred times the lethal dose of pneumococci lost only 17.6 per cent. as a result of the infection,

but 15.2 per cent. died from toxicity of the drug. These results are most striking. In these experiments the drug was given at practically the same time as the pneumococci. Morgenroth, however, was able to save mice by giving the optochin twenty hours after a dose of pneumococci which would prove fatal within forty-eight hours. It has also been shown by Moore that rabbits receiving 0.1 gram per kilo, showed the maximum bactericidal effect in the blood within one hour, this largely disappearing within three hours, and in man receiving 0.45 grams of the optochin hydrochloride every six hours that there was a considerable cumulative effect, the bactericidal properties of the blood being much greater two and three-quarters hours after the last dose than it was after the same period of time from the first dose. While the protective value of optochin against the pneumococcus in animals has been very clearly demonstrated, we must bear in mind that the amount of drug used in this protection often overstepped the toxic dose. The drug is distinctly toxic in rabbits, causing spastic and inco-ordinate movements and finally complete paralysis of the extremities nearest the site of injection, and death. Doses much smaller than this produce in man constriction of the retinal vessels and often complete blindness which, however, provided the daily amount given has not exceeded 2 to 3 grams daily, is temporary. Peifer reports complete transitory blindness in a patient who received 2 grams in two days—0.5 grams the first day and 1.5 grams the second day. It is the opinion of those who have worked with the drug clinically that .25 grams every hour (a total of 1.5 grams daily) is a safe and efficient dose given in capsules.

When we consider that in order to protect mice from several times the lethal dose, an amount was given equivalent to 30 grams in a 140-pound man, we can see there is a great difference between this and the present dose recommended. Turning, however, to clinical reports there is considerable evidence that optochin in doses of .25 grams every four hours and continued until symptoms subside is of value in the treatment of pneumonia. We have already discussed the unreliability of statistics but will nevertheless resort to them again. G. Rosenow has recently reported 26 soldiers treated with optochin, these being all comparatively young men, twelve under twenty-

five years of age and only one over forty years, with two deaths or 7.7 per cent. As the average mortality from pneumonia in the German army during times of peace is only 3.5 per cent. these results would not appear especially encouraging. When we study the cases individually, however, there does not appear to be a definite shortening of the course of the disease, and according to Rosenow sixteen of the twenty-six had definite beneficial effects from the optochin. Lenne reports seventeen cases with a mortality of 11.8 per cent., while the mortality with the controls was 30 per cent.; Loewe and Meyer forty-three cases with a mortality of 7.4 per cent., but no controls; Fraenkel, twenty-one cases, six showing definite results. Other reports of small series of cases appear in the literature. However, the total number is altogether too small to draw conclusions, especially in the absence of proper controls. The actual value of any therapeutic agent in pneumonia should be determined by the mortality; apparent shortening of the course of the disease or lessening toxicity are less convincing than the number of lives saved, and up to the present there is nothing in the mortality rate that should excite any special enthusiasm. It must be said, however, that this is the first drug used in the treatment of pneumonia which has first been tested carefully on animals and found to possess undoubted value. For this reason the future of ethylhydrocupreus in treating pneumonia in man is at least encouraging.

For review of the Literature the reader is referred to Moore's paper, *Jour. Exp. Med.*, 1915, XXII, 269.

THE DIAGNOSIS AND MEDICAL TREATMENT OF EXOPHTHALMIC GOITER.*

STEPHEN R. PIETROWICZ, M. D.

CHICAGO, ILLINOIS.

Mr. President and Gentlemen: In presenting to your Society the study of this remarkable and interesting disease, I have taken the histories of fifty-two cases which exemplify the various stages of this syndrome, with an analysis of the cases and a study of the bibliography of the subject, which occurred in my practice or were seen by me in consultation with the members of the staff

*Read at the North Side Branch of the Chicago Medical Society, Nov. 12, 1915.

of St. Mary's of Nazareth Hospital, and with the members of St. Elizabeth's Dispensary, of the Municipal Tuberculosis Sanitarium. Forty-nine were in women; 3 in men. Twenty-one married, ages 19 to 50; 28 single, ages 14 to 45. The ages of the men were 19, 26 and 45, respectively. Twenty-nine were American-born; 23 were of foreign birth. All were white. Occupation of no great interest. Of 21 married, 16 bore children. In none was a history of congenital goiter obtained. An hereditary influence was noted in 5, on the mother's side. A most painstaking and thorough clinical examination of the nose, tongue, mouth and throat was undertaken, as was also an examination of the teeth, pharynx and larynx.

A critical study of the clinical manifestations was noted.

The following study of the teeth was made, and in forty patients showed the presence of the following conditions: (1) Carious teeth. (2) Much's pustular fistula at the roots of teeth. (3) Pulpless teeth. (4) Neuralgic form of teeth. (5) Pyorrhea alveolaris or Rigg's disease. (6) Amalgam-filled teeth.

An examination of the mouth in fifteen cases showed the presence of white plaques situated on the buccal mucous membrane. In thirty the breath had a fruity or garlic odor. In ten, foul or septic. Small ulcers were found on the buccal mucous membrane in the region of decaying teeth. In eighteen patients the following conditions were found affecting the tongue: (a) Glossitis; (b) granular tongue; (c) leukoplakic patches; (4) furring and coating of the tongue. Of marked contrast, forty patients showed the following changes in the tonsils: (a) Acute infection or chronic; (b) caseating follicles; (c) tonsillar stumps; (d) partial resection in six.

In an examination of the pharynx in thirty patients the following conditions were found: (a) Acute congestion; (b) granular pharyngitis; (c) extreme dryness; (d) extreme paleness; (e) sore throat.

Disturbance in phonation, while not an early symptom, has been found, and examination of the larynx would reveal congestion and sluggishness of the cords; sometimes thickening. Paralysis in the early stage was not noticed.

An examination of the nose revealed the presence of sinus disease in six; and in fifteen, other pathological states were noticed. The examina-

tion of the neck in twenty cases revealed polyglandular enlargements of the anterior cervical and of the submaxillary chains, which is of more than mere passing notice.

In calling your attention to the prevailing infections, as above recorded, we have in mind at this particular time and wish to call your attention to the fact that in fifty-two patients some infection was present in the mouth, tongue, teeth, nose, tonsils, pharynx, and larynx, and that in thirty-five of this group, where the infection prevailed on the right side, the right lobe of the thyroid was found to be more enlarged than the left, and of the balance of the cases we found an enlargement existing on the left side in ten patients, where the seat of the infection was left-sided. We find that these observations correspond to the observations reported by Pletneff, in 1914, in the Russian Vratch, who reports a small number of exophthalmic goiters arising from influenzal infections of the throat; also the observations of Vincent in 1906, and F. Billings in 1914, on focal infection. The work of Rosenow and Woodyatt, and its relation to goiter has been noted.

For the convenience of presentation I have divided my patients into three groups, adopting the classification of Otto¹ of Jena. In all, however, the symptom-complex was found to be present. *Group 1*: Mild type. *Group 2*: Moderately advanced type. *Group 3*: Advanced and severe type.

Group 1, or the mild type, consists of 19 patients, 15 of whom were single, 1 a man, and 4 married.

Group 2, or the moderately advanced, had 13 patients, 5 married and 8 single. Two of the married patients were men.

Group 3 included 20 patients, 12 married and 8 single.

According to the grouping, the character, the significant and the individual signs and symptoms will be discussed; also the diagnosis of the clinical syndrome.

Group 1. The four classic cardinal symptoms in their appearance of importance are as follows: Goiter or struma, tachycardia or pyknocardia, exophthalmos, tremor, etc., but these symptoms are usually present only when a frank manifestation of the disease is present, and upon a critical

1. Med. Klin., June 16, 1912.

study of our groups we find that instead of the above classics we have very early manifestations of a nature which would make one seriously consider some acute infection (Barker),² and that our study brings us to the belief that the forerunners are symptoms pointing toward cerebro-spinal or sympathetic nervous systems, irritation, with profound autonomic neurone disturbance, beginning with neurasthenic, psychasthenic and sometimes even psychic manifestations, with headache; shooting pains in the neck, jaws and back; insomnia; anxiety; irritability; apprehensions of joy or fear; languid feeling throughout the body; with feelings as if the limbs were giving way during exercise; Charcot's sign, with jerks of the feet while in bed; subjective sensations of heat and cold; alternating moods; hallucinations; visual and auditory disturbances, with persecutory ideas; fatigue and great prostration upon little effort; vertigo; light head suspicion; great loss of physical and mental strength and anorexia. Choreic movements have been noted. Upon further inquiry we find that the appearance of the struma was an accidental finding, causing great surprise to the patient, or a history of some recent acute infection of the tonsils has been obtained, or perhaps repeated attacks of the same, with or without rheumatic pains in the joints. We frequently find at this particular time that the slightest pressure or manipulation over the goiter region, or upon the goiter itself, suggests a recent palpable swelling, and perhaps an acute thyroiditis. At this particular time, a careful examination will show the adrenal phase; slight rise in vascular tension; also other phenomena pertaining to the circulatory system which will be helpful to the diagnosis.

The heart sounds are accentuated, due to the excited and accelerated action of the heart. Accidental systolic murmurs are heard both at the base and apex. (Lambert.)³ Clinically, the disease takes on different forms and course with or without interrelation to its symptoms as a guide, showing that hyperthyroidism is not an entity. It surely is not an expression of any single influence. The radial pulse is usually small and rapid, running about 110 to 130 beats per minute. The tachycardia is not as yet fully established. Blood pressure is often a few millimeters of mer-

cury above normal. The throbbing of the vessels of the neck is but slight, and pulsations in other vessels not very noticeable. Patients complain of distressing symptoms, such as cold extremities, due to poor circulation, which is influenced by the vaso-motor nerve derangement.

The blood findings were anemia of a moderate degree. In ten cases there was anemia of a chlorotic type, the red blood cells averaging between two and one-half and three million, with hemoglobin of 65 (Sahli). The white corpuscles showed an increase in the lymphocytes. No alteration as to form or staining characteristics of the corpuscles was noted.

Digestive disturbances are not uncommon, diarrhea alternating with vomiting without apparent cause. Hyperchlorhydria is seen occasionally, but at this time an achylia gastrica is not present.

Muscular twitchings are fairly constant. In this stage the tremor, as noted and described by Charcot and Trosseaux, is not well established. The exophthalmos in Group 1 has not been found to be of any great diagnostic value; nevertheless, the eyes appear large—unusually so—giving a striking picture as though out of proportion, but not sticking out of the head, as they do appear in later stages of this disease, though the change in the facial expression is suggestive, not as yet showing evidence of cranial or sympathetic nerve involvement. Although at this time we may find an early Moebius or von Graefe, it is not a constant finding.

Dyspnea, while not an early symptom, and relatively present, has been noticed, and does not seem to be of cardiac origin. Air hunger is manifested by the frequent yawning, and is very often overlooked as being a symptom of no importance, although occasionally so severe as to call for special treatment. This is usually found in young women, and in early pregnancy.

Examination of the urogenital apparatus will reveal polyuria and transient albuminuria. The ureanitrogen and total nitrogen output as yet shows scarcely any corresponding acceleration of metabolism. The finding of glycosuria is merely accidental.

The menses are irregular and scanty, with frequent disturbances of a varying nature, as dysmenorrhea, amenorrhea, and menorrhagia. Leucorrhea is an early finding in the young woman, and disturbs the patient greatly.

2. Barker: Sect. of Surg. and Anatomy, A. M. A., 1907.

3. Lambert: New York Med. Jour., September, 1912.

Sexual disturbances are noted quite early. A peculiar inactive state determines sexual crises.

The integument reveals important phenomena, and the observations of the skin vary with individual patients. The skin is nearly always smooth, delicate, occasionally injected, thin, clammy and moist. In dark individuals its assumes the aspect which suggests hematogenous jaundice. Sometimes the blending color may be of lighter shade, as of a dirty color. The striking picture is the facies of the patient, with its mask-like appearance, involving the integument of the entire face.

Fleeting edema of angioneurotic origin is not unusual, as also leucoderma and vitelligo covering the chest and back. Telangiectasis is not uncommon, with an itching urticaria. The fingers of the hands become long and slender, with wasting of the interosseous muscles, and pigmentation of the skin resembling a sunburn, is quite frequently seen.

Sweating is noticed very early. This not alone involves the hands, axillae and the feet, but may be a generalized, mild hyperhidrosis.

Vigoreaux's sign, the increased electrical conductivity, is present in a large number of patients, and explained by the increased moisture of the skin.

Vaso-motor instability or paresis, dermatographism, easily induced, is one of the most constant and striking symptoms.

Blotchy erythema involving the chest, especially the upper part near the neck, is observed, brought out best during the examination or the slightest manipulation of the skin. Pigmentation of many shades is a valuable cutaneous sign. It involves the extensor surfaces of the extremities usually; also the exposed surfaces of the face and neck. The eyelids are prominently discolored. Frequently we find Jalineck's sign, and a swelling of the eyelids has been noticed in this group of patients.

The axillae, and not infrequently the back, are pigmented, showing sharp lines of demarkation. The chromafin system is undoubtedly affected by the thyrotoxicosis. The hair is of a downy, scrawny character, and shows the signs of early atrophy. The eyelashes are the first to show these atrophic changes, becoming short, brittle and sparse. Not infrequently they have entirely disappeared.

The general metabolism of the patient is affected to some extent. The tendency to emaciation at this period is not extreme, but, nevertheless, a loss of from ten to twenty pounds is recorded in nearly every patient.

The occurrence of slight pyrexia and alternating temperature is noticed. Whether this is due to a disturbance of the heat-regulating center, or whether it depends upon the increased oxidation, is not clearly understood.

Though it may seem possible for an internist to recognize hyperthyroidism in this particular stage, or group, it has been my experience that the symptom-complex, as above noted, is least thought of, for while the symptoms correlate we have still missing the essentials of what constitute the classic syndrome. It is here that the element of time and the anamnesis can only determine one's proper assumption, as the following group will now reveal the more pronounced symptoms of thyrotoxicosis.

Group 2, or the moderately severe. We find that here there may occur a period of apparent arrest of all, or nearly all, clinical manifestations, and the fundamental fault is probably some uncertain exciting agent that has become dormant, and that the element of time, with the increased intoxication, has increased the severity of some of the prominent manifestations, and has now assumed a more serious aspect. We realize that the thyroid reaction or dysthyroidism, which has played such an important part in infectious diseases, puberty, pregnancy, cretinism, and Basedow's syndrome, and so forth, may not be due to the same cause. Age is an important factor in thyroidism, and the young are more susceptible, and compensatory adjustment with constitutional inferiority plays an important part.

The increasing severity of the symptoms, with more prominence of all phases with the now prominent struma, which to the palpating fingers will reveal a well-defined enlargement in the majority of the cases, and since we have been taught to recognize even slight enlargements with percussion dullness over the manubrium sterni, our failures of recognition of slight enlargement have grown fewer, and even with no pronounced objective or subjective findings a deep-seated retrosternal struma may be assumed. From a recent study of a large series of goiters we find occasionally a small struma of a highly toxic nature, which his-

tological study will prove to be a gland of highly specialized thyroid tissue, filled with thyroid follicles and cells. It is this type of goiter that has long escaped detection, and can only be proven by surgical means.

The nervous symptoms in this group are still prominent, although a corresponding period of depression and anxiety prevails. The patient may be bouyant in mood, and, again, complain bitterly of headache, ringing in the ears, and visual disturbances. Any undue or even slight excitement may provoke an outburst of passion and anger, ending in confusion, followed by disturbances of disorientation.

Struma is now recognized in the majority of patients. One or both sides of the gland may be enlarged, and even the isthmus may be broadened and thickened, giving rise to a horseshoe-shaped projection. The gland may be soft, or, again, possess the characteristic feature of being granular to the touch. This may be due to lobular hyperplasia. Vascular peculiarities may be noted. Even in this group the prominence of the gland may be absent.

The tachycardia has been well-established, and is the symptom which at this time may be most prominent, and upon which the examining physician lays great stress. The pulsations may be visible, and a pulse rate of between 110 and 160 is very common.

At this time the patients complain bitterly of this palpitation. This palpitation may be continuous and persistent, or may be precipitated by any psychic influence. The blood pressure is increased. Pulse pressure (the difference between the maximal and the minimal pressures) may be large, indicating a large systolic output from the left ventricle.

The exophthalmos is now persistent, and it is necessary to differentiate between apparent exophthalmos due to mere widening of the palpebral fissure and true protrusion objectively.

We now find most of our prominent eye symptoms, such as the following: (1) von Graefe sign—failure of the upper lid to follow the eyeball in looking downward. (2) Moebius' sign—inability to hold the eyes in the position of convergence. (3) Kocher's sign—subjective feeling of pressure behind the eyeball. (5) Stellwag's sign—infrequent and incomplete winking. (6) Gifford's sign—inability to evert the upper eyelid.

We also find a number of eye symptoms, such as excessive dryness and excessive lachrymation; in fact, every ophthalmologist of renown has some certain sign that is given his name. These are merely accessory signs, but still are not without diagnostic value, and, to the trained physician, give a clue to this condition which otherwise might escape detection.

Exophthalmos was present in about sixty-five per cent. of our cases. The exophthalmos may be so harmful as to cause great anxiety. Two cases had unilateral exophthalmos. The tremor is now well-established, and may be easily elicited. It is best established by asking the patient to hold the hand with the fingers widespread between the observer and the light. It may be rapid and vibratory—as many as ten to twenty oscillations per second, frequently well brought out by placing a paper upon the extended fingers, when the paper may be seen to tremble, or the examiner may hold the patient's fingers lightly and feel the tremor. This symptom is of great importance.

The gastrointestinal apparatus, the same as in Group 1, may show a diminution or an increase in diarrhea and vomiting. It is, however, of little help in diagnosis. Other symptoms are too inconstant to be of much diagnostic value. Atony of the stomach has been noticed in this group, and seems to be a prominent feature. A good deal of belching, with irregular appetite, is noted. Epigastric pain has also been noticed. Polyphasia may be present.

The respiratory rhythm is deranged, and is due to increased vagi and sympathetic involvement. Bryson's sign, the lessened expansion of the thorax, due to weakened action of the diaphragm, has been noticed; also Hoffbauer's sign—the flattening of the respiratory curve. Dyspnea is quite prominent. Further investigation will reveal other manifestations, such as cough, occasionally asthmatic attacks of a nocturnal nature. The urogenital apparatus will show acceleration of metabolism by the increase in the total nitrogen, uric acid and phosphate output. Polyuria and polydypsia are prominent.

The integumental symptoms are now well-pronounced and in nearly all cases of hyperthyroidism by careful examination changes of a toxic nature may be noted. This symptom is one in which a good deal of information is wanting, in spite of our advanced knowledge of skin manifestations.

The changes in the muscular system are quite apparent. Emaciation is now well-advanced, with a corresponding loss in weight (twenty-five to forty pounds) and strength. The muscular elements are replaced by large, thick, interstitial lipomatosis, particularly under the chin and tongue, the back, the scapular region and the rates. The panniculus adiposus is greatly diminished in other regions.

Group 3. This brings us to a full realization that the disease (Hoover),⁴ hyperthyroidism, dys-thyroidis or thyrotoxicosis, is, if you please, now well-established and presents the cardinal symptoms as manifested by the usual classic symptoms of struma, which is of various sizes, one or both lobes being enlarged, with a varying consistency and chronicity in its course. It may be a struma vasculosa with telangiectasis, with visible pulsation of the goiter; palpable systolic expansion and audible bruits and thrills at the point of entrance of the thyroid arteries, especially the superior. In fact, the size attained by the goiter may be very large, irregular, although it may be small and exceedingly hard to the palpating finger.

The right side of the goiter is the most prominent, and sometimes flattened and partly buried under the sterno-cleido-mastoid muscle, producing pressure symptoms and dysphagia—occasionally aphonia. Seldom any pain is directly referable to the gland itself.

The tachycardia is now very prominent. The pulsations may exceed two hundred beats per minute, usually continuous and persistent. We may find dilatation hypertrophy, incompetent valves and irregularities of the heart, such as intermittent phenomena, giving the patient a good deal of apprehension. Angina pectoris was occasionally complained of, with radiating pain up the neck and down the left arm.

Symptoms of myocardial incompetency and the typical goiter heart, with or without gallop rhythm, may be present. The degree of cardiac involvement plays an important part in the outcome of the patient's condition, and it is the most valuable symptom that gives any clue to the relative dependence upon the prognosis. To both the internist and the surgeon the *prima facie* evidence of what treatment should be employed.

The exophthalmos is now very prominent, showing the typical picture of the eyeball, with its

glaring sclera, and producing symptoms of pressure which are pronounced, and which give the patient the typical facies, with the changed expression that is so striking.

Tremor was found present in all of our patients, and was pronounced, not giving rise to any mistakes that could possibly be encountered in this important phenomenon. It is needless to say that when the triad was present the tremor was never missing.

Symptoms pointing to the involvement of the nervous system in this group were not of the acute type, the patient not being quite alert or apprehensive, as in the previous two groups, never bordering on that acute stage; nevertheless, quite satisfied and docile, but still apprehensive of her general condition; changed through long suffering into a more contented patient, abiding, and usually willing at this critical time to reason, never commanding, but depending upon the word of her medical adviser. She is a most profoundly changed person, showing the peculiar changing of the stage of hyperthyroidism, where the varying toxic, reflex, infectious, obscure metabolic or still other factors have lost some of their influence upon the nervous system; but still the influence of this profound intoxication remains, demonstrating the chronicity as affecting them.

The digestive, urogenital and metabolic systems show, in a measure, the chronicity of their stages in proportion to the severity of the disease, and, while present, are overshadowed by the above-mentioned cardinal symptoms.

Invalidism has now become a prominent symptom, and must be reckoned with in weighing the evidence of the general condition of the patient.

In conclusion, the decisive nature of typical exophthalmic goiter, and its prominent symptoms, are scarcely overlooked except by the untrained observer. In typical cases of the so-called *forme frustis* some difficulty may be encountered. It is my belief (Barker)⁵ that in the beginning of the struma, if we realize the importance of the thyrotoxic equivalents and rule out psychopathic states, one will rarely be left in doubt. Remembering the importance of the early symptoms, and their importance in the acute stages, nothing should be left undone, and all symptoms should be correlated, and all known

4. Hoover: Ohio State Medical Jour., July 15, 1912.

5. Barker: Sect. Surg. and Anat., A. M. A., August, 1907.

tests applied, with the signs and symptoms bearing importance. Then error will become rarer in the diagnosis of this disease.

MEDICAL TREATMENT OF EXOPHTHALMIC GOITER.

The success attended by medical measures depends upon the following facts: (1) That a large percentage of patients recover in the first group by the well-established rule of absolute rest, both mental and physical, isolation, subdued light, partly forced feeding, and the removal of any pathological foci existing within the oral cavity. (2) That the judgment of a careful, competent and thorough laryngologist be employed, and whatever surgical measures that are necessary should be carried out scrupulously, in order to rid the patient of whatever absorption of toxic nature there may be.

Medication in the first stage is of questionable value; nevertheless, all our patients were put upon lactic acid ferments, and a marked influence after the administration of these ferments was noted upon the general condition of the patient, in which there was marked slowing of the heart and a decided diminution of the nervous symptoms, giving great relief, and producing a marked sedative effect. At this time it is proper to instruct the patient's attendants to use fresh, home-made buttermilk, which I consider preferable to any of the chemically prepared products, but in the absence of such, lactic acid ferments from artificial media may be employed as a substitute.

The gastrointestinal symptoms were also greatly relieved.

The application of hydrotherapy should be enforced, and frequently a change of environment and climate be advised, which in a measure should not entail any prolonged hardship of travel, referring these patients to a competent medical observer, with the written directions informing the patient that the element of time plays an important part in the cure, and that it frequently requires from six months to a year of competent advice to cure the condition. Also that relapses are bound to occur unless great care is taken by the patient, bearing in mind the principle of elimination, and advising the patient upon the necessary requirements in such a condition.

At this stage the administration of sodium phosphate and magnesium sulphate for their sedative effects may be advised. The quinine hydrobromide with ergotine in doses of two grains

each every four hours has frequently given much relief to the patient.

One should be very cautious in the administration of the iodides, as the iodine content of the gland is great, and may produce constitutional iodism and over-stimulate the thyroid, and possibly other glands, with an internal secretion to extra functioning, the over-supply of the thyroid secretion may act as a predisposing and provocative element in the clinical syndrome and recuperation hindered.

A careful and selected diet for each individual case was prescribed, according to the state of the patient. This diet, while generous, was free of any purin bodies, and with a limited amount of carbohydrates. The intake was regulated in proportion to the needs of the patient.

The injection of twenty-five minims of five per cent. carbolic acid solution twice weekly has been successful in a limited number of cases. The injection of the gland with iodine and iodoform is not recommended. The injection with boiling water and its beneficial results are well-known, but should be left in the hands of a competent surgeon. The use of serum has been successful only in the hands of certain men, and is of questionable value, and as yet cannot be applied as a routine measure. Thermic baths and strumen baths, as used by Gradle and his sons at Neuheim, have met with success in the hands of those observers, but only under the most scrutinized observations.

The application of local agents has been a profound failure. The patient must be treated symptomatically, according to the necessity and urgency of the symptoms upon their appearance. The use of electricity has not met with success, but recent observers claim certain benefits from x-ray and radium. Radium and the x-ray are only indicated when medical treatment fails. A large number of observers claim great benefit for systematic exposure, never allowing the rays to produce a dermatitis. The nervous manifestations, tachycardia and general health are improved under this treatment. This form of treatment has its limited therapeutic value and as yet no statistics of any great importance, with observations, have been recorded, except from an occasional observer.

The care of the mouth in relation to oral sepsis is imperative. Strict hygienic precautions, with

mild antiseptic washes, are indicated at least three times a day, usually after meals, and on rising in the morning.

Upon a careful study in the present state of knowledge, when reasonable measures have been applied, in which no early improvement is noted, it becomes the physician's duty to recommend the patient to a skillful surgeon of known ability as an operator, and who is skilled in the special technic of the thyroid. It is an important responsibility and should be the physician's duty to impress the patient of its seriousness and dangers.

I wish to thank the members of the staff of St. Mary's of Nazareth Hospital, also the members of St. Elizabeth's Dispensary of the Municipal Sanitarium for their assistance in referring many of the patients for examination, and the personal interest that was taken in this particular subject as related to my study.

BIBLIOGRAPHY.

1. Otto: *Med. Klin.*, June 16, 1912.
2. Lambert: *New York Med. Jour.*, September, 1912.
3. Barker: *Sect. on Surg. & Anat.*, A. M. A., 1907.
4. Hoover: *Ohio State Med. Jour.*, Columbus, July 15, 1912.
5. Biedel: *Internal Secretions.*
6. Vincent: *Internal Secretions of Ductless Glands.*

GOITER AND THE INDICATIONS FOR ITS TREATMENT.

A. AUGUSTUS O'NEILL, Ph. D., M. D.
CHICAGO, ILL.

Surgeon-in-Chief, Columbia Hospital.

It seems to be my experience that there is an increasing prevalence of goiter in this region and that in dealing with it there is much divergence in the discrimination of its different manifestations, and consequently some confusion in its treatment.

Probably the greater part of the disagreement is caused by the confusion which arises from the misuse of terms. These terms, while all referring to the different manifestations of goiter, are not held strictly to distinct pathological states. In a former essay⁶ made to clarify the literature of the subject, I introduced the terms Hypothyroidosis and Hyperthyroidosis or their syncopations: Hypothyrosis or Hyperthyrosis.

Hyperthyroidism, rightly speaking, would refer to a system or doctrine so that in dealing with a theory of thyroid manifestations, thyroidism

would be the proper term; but the patient suffering from the effects of a hyper or hypo-secretion of the gland would be in a condition of hypothyroidosis or hyperthyroidosis. Again, where there is a perversion of the secretion by the addition of a toxin or toxins the resulting condition would be a thyrotoxicosis; a term which should be confined strictly to its application to the so-called toxic goiter.

Up through the centuries of darkness, and the chaotic past of thyroidism, great names have been associated with the different steps in the enlightenment of this subject: Morgagni, Parry, Moebius, Graves, Flajani and Basedow; Graves, perhaps, the most conspicuous in discerning exophthalmus, the distinguishing feature. From the day of these illustrious men, no new constellation of names has appeared until recent years.

Mayo,¹ Kocher,² Wilson,³ Plummer,⁴ McCarthy,⁵ and others have at last established a definite relation between clinical manifestations and pathological entities. Hyperthyroidosis, commonly known as exophthalmic goiter, is accompanied by a constant pathological finding and may be summed up in two words, i. e., hypertrophy and hyperplasia. Kocher² makes the positive statement that "No special histological findings were discovered in the thymus gland at necropsy of fourteen cases of death from Basedow's disease, and further, that no instance of Basedow's disease is yet known in which at necropsy or operation the thyroid was found free from hyperplasia, though the thymus is often apparently normal."

Wilson, whose work on this subject is colossal, in his most recent paper states that practically all cases of clinically true exophthalmic goiter show marked primary hypertrophy and hyperplasia of the parenchyma of the thyroid. Furthermore, "the degree of severity of the clinical condition is similarly paralleled by the pathologic condition of the glands." These findings in so many thousands of cases by such observers place the question of hyperthyrosis on a sound basis, both as to its pathology and as indicating the means of its correction.

The interrelation existing between certain infections, intestinal and other intoxications, the intoxication of pregnancy and thyroid activity would seem to establish a relationship of cause and effect, and that in the beginning such thyroid

⁶Read at meeting Chicago Medical Society, Dec. 12, 1914.

activity would indicate a defensive rather than an offensive action of the gland; a defensive functional activity due to stimulation resulting in various forms of hyper-activity producing degenerations as a consequence of a break or out-riding of physiological co-ordination, but in making such statement the writer is conscious of a possible sophism.

As stated above, the procedure for correction of an hyperthyroidosis seems to be well settled, though many pathological questions and physiological intricacies of the thyroid gland in its bearings upon other glandular functions remain to be worked out; but the condition in a practical sense is now well understood by the surgeon who, realizing the grave consequences of an uncorrected hyperthyrosis leading to degeneration of the heart, nervous and mental system, kidney, spleen and liver, urges an early operation before such serious consequences shall have supervened.

The attention attracted to the thyroid through Graves' disease has resulted in the discovery of another condition scarcely less important than the foregoing, one to which the writer wishes to call especial attention—toxic goiter causing thyrotoxicosis.

As pointed out by Wilson,³ the clinical condition in toxic goiter bears a constant relation to pathologic findings. We may have toxic-exophthalmic and non-toxic exophthalmic goiter, (Plummer⁴), and toxic goiter.

That there is a constant relationship between function and structure is as well understood as that structural conditions impose functional limitations. And no less subtle is the relation of function to structure than is that of force to matter. According to the common law of reason it would be erroneous to conclude that as in toxic-non-hyperplastic goiter the secondary regeneration of atrophic parenchyma was the cause of the toxic state or the toxic state the cause of the secondary regeneration. But why the regeneration? It is axiomatic that as increased thyroidation is called forth by increased functional demands for purposes of development and defense it would be logical to presume that a secondary regeneration of atrophic parenchyma was called forth for functional reasons. The relation of the toxin to such regeneration as cause or effect may well be considered. Until we know what the toxin is we must remain in the realm of speculation and with such an undistributed middle term be in

constant danger of committing the sophistical "falacia accidentis." For all practical purposes it is sufficient to know that the toxin is produced in the thyroid gland and that simple non-toxic goiter may and will, if existing long enough, become toxic-non-hyperplastic goiter. As worked out from a careful review and pathological examination of several thousand cases (by C. H. Mayo,¹ Wilson and Plummer) "The average lapse of time between the appearance of non-hyperplastic goiter and the development of toxic symptoms is found to be 14.5 years, during which time there may be a mild toxic state with its effect on the heart and other organs; a mild thyrotoxicosis in a simple goiter which may at any time be converted into a case of toxic-hyperplastic or exophthalmic goiter."

From such findings we are justified in announcing that a harmless goiter is a myth. The three pathologic states may well be taken as the ground markings for the medical and surgical treatment. The early or simple hypertrophy being a functional response which we should endeavor to assist by administration of some simple form of iodine and guarded doses of thyroid extract, and attention to other constitutional conditions. This class includes the goiter of adolescence, pregnancy, etc., and responds very readily to medical treatment.

The second class, the toxic-non-hyperplastic, requires the most careful scrutiny, for here we are on the border-land, dealing with mixed conditions. Here, also, in the medical treatment the use of thyroid extract and of iodine preparations should be very carefully resorted to, as well as thyroid extract, general tonics, with iron, quinine, arsenic, thymol, etc., carefully watching any change while administering the thyroid extract or iodine, during which time, should there be any manifestation or increase of the nervous, cardiac, or toxic symptoms, there should be an immediate withdrawal of the iodine and thyroid extract lest we may superimpose a hyperplastic state. The purpose of the above treatment is an endeavor to assist the functional action of the gland, supplying the system with thyroid extract to reduce the functional draft on the gland, reducing or preventing regeneration taking place in old goiters and thus preventing or reducing the toxic condition. This failing, surgical removal of the old goiter is indicated.

This class includes the cases complicated with encapsulated adenomata, which occur in about forty-four per cent. of simple and ten per cent. of exophthalmic goiters. As the cases of encapsulated adenomata are not improved by medical treatment, their surgical treatment is indicated, and in case of accompanying pronounced toxic symptoms such surgical treatment is imperative.

The third class, i. e., toxic-hyperplastic or exophthalmic and atoxic hyperplastic, are all surgical cases. Medical treatment of this class is but palliative; combining such treatment with rest in bed for a long or short period until a patient can be brought into the best condition of vital surgical safety described in my former paper;⁶ and the condition thus obtained determines whether a radical surgical removal of one lobe or more be decided upon or the more conservative procedures of ligation en masse of the superior and inferior thyroid arteries, or the hot water injectinos. The writer prefers ligation en masse at the superior and inferior poles and isthmus.

These later conservative procedures, however, must be looked upon as only preparing the way for the more radical operation, which should be resorted to a month or two later, and before relapse shall have occurred.

The surgical treatment thus carried out is attended with but an insignificant mortality, which should not exceed one per cent., and in the hands of the writer the mortality is less than one per cent.

BIBLIOGRAPHY.

1. C. H. Mayo: Surg., Gyn. & Obs., 1914; Am. Jour. M. S., 1913; Jour. A. M. A., LXII, No. 2 and vol. LIX, and S. G. & O., April, 1912.
2. Kocher: Archive fur Klin. Chir., Oct. 24, 1914.
3. Wilson: Med. Rec., Aug. 30, 1913; Jour. A. M. A., 1914.
4. Plummer: Am. Jour. M. & Sc., September, 1913; Surg., Gyn. & Obs., 1914.
5. William C. MacCarty: N. Y. State Jour., 1912; Surg., Gyn. & Obs., 1913; Jour. A. M. A.
6. A. A. O'Neil: Ill. Med. Jour., January, 1915; Bull. C. M. S., Dec. 19, 1914; Bull. C. M. S., July 16, 1914.
7. Kocher: Keen's Surg.

A SERUM TREATMENT FOR PHYSIOLOGICALLY DEFECTIVE THYROIDS, WITH CLINICAL REPORTS.*

RACHEL WATKINS, M. D.

CHICAGO.

During the past fifteen years the ductless glands have come into the limelight in medical

science. The thyroid gland has received special attention, due, perhaps, to the rapid increase of goiter.

It is not my purpose to go into the pathology or the physiology of the thyroid gland in this paper, but rather to accept the finding already familiar to scientists and to give a treatment with its technique and its results in my hands, after using the serum for a period of one year and on about one hundred cases.

The medical treatment consists of the administration of a blood serum derived from a thyroidized goat. Formula: Iodine 0.16 grams, oil 0.25 c.c., serum q.s. 1 c.c. Dose: 1 to 4 c.c. The serum is injected warm within the capsule of the thyroid gland, the frequency of the injections depending upon the physical findings—may be from two to six weeks, or, in some cases, even longer intervals may be advisable. The site of the injection, always within the gland, but governed by the outlines of the lobes or isthmus. In cases of cystic degeneration with liquefaction of the gland, the cysts are drained before the serum is injected.

This treatment is known as the Mark White treatment, and was brought to its present state of development by the originator, Mark White, after some ten years of research work.

The following comprises a partial clinical record of cases treated in January and February of this year. We classify as follows for our own convenience:

1. Fibrous goiter.
2. Colloidal goiter with marked circulatory disturbances.
3. Colloidal goiter with marked nervous disturbances.
4. Colloidal goiter with marked mental disturbance.
5. Cystic goiter.
6. Marked nervous complex without the goiter.

TYPE No. 1.

Case 1. Female, aged 40 years, native of America, married. Occupation: Housewife. *Family History*: Maternal grandmother had goiter. Mother had very large goiter; died of it at fifty-two years. One sister also has goiter. *Personal history*: Had ordinary diseases of childhood. Was never robust until after puberty at seventeen, when general health improved for a short time, but very soon the onset of the present illness appeared. There was little inconvenience except a mild tachycardia at times until at twenty-

*Read before the Stock Yards Branch, Chicago Medical Society, Dec. 9, 1915.

six, after birth of first child, an exacerbation of the entire symptomatology of Graves' presented. The gland enlarged rapidly. In two years another pregnancy occurred, and during this patient had a tachycardia ranging from 120 to 150. This, with a marked tremor and muscular weakness, rendered the patient unable to be about much of the time. One month after delivery she suffered an acute choking spell, which rendered her unconscious for six hours. She was put on thyroidectine in large doses, but not until three months later was she strong enough to undergo an operation. Then the right lobe was excised, and for two months the symptoms partially abated, but later the left lobe began growing rapidly and all symptoms were renewed, gradually growing more severe until the past two years patient has been a constant sufferer.

Present finding: There is a nervous cough; no expectoration; pain in back of neck and between shoulders; frequent attack of palpitation, with dyspnea; gastric distress after eating; pains in gastric region; frequent micturition at times; constipation followed by diarrhea is common; headaches in back of head; a sense of general muscular weakness; increase of fatigue; radiating pains in calves of legs, arms and shoulders; insomnia. General state of nutrition is far below normal. Pulse, 120. Temperature, 98.6°. Urine shows no sugar or albumin.

Physical examination: Head and neck: Tongue coated; teeth in bad repair; pharynx shows chronic inflammation; thyroid, left lobe as large as apple; isthmus size of walnut; right lobe surgically absent. Thorax: Lungs negative; heart, outline of cardiac dullness increased downward and to the left. A bruit at base of heart extends up to thyroid region; valvular sounds normal; impulse visible over precardium; beat rapid, forcible. Abdomen negative. Pelvis: Perineal laceration of first degree. Uterus retroverted and slightly prolapsed. Blood pressure 110. Weight 101. Height, five feet four inches.

January 1: 2 c. c. of serum injected into left lobe and isthmus. Pulse at end of first week following was 100. Blood pressure, 120. Insomnia improved so that patient got seven hours' sleep each night. All symptoms improved, including a decrease in size of gland about one-third at end of fourth week.

February 19: Pulse, 100. Blood pressure, 130. Weight, 106. Gave 2.5 c. c. serum. Had the usual reaction, which lasted about thirty-six hours. In four weeks gland was reduced three-quarters, and all nervous symptoms had disappeared. Pulse, 88. Blood pressure, 130. Weight, 110. At the end of three months gland was normal in size. Patient had gained twenty-two pounds in four months. All symptoms of Graves' disease had subsided. Saw patient six months later—still in normal condition.

Case 2. Male, aged 20 years, native of America. Single. Occupation, press feeder. *Family history:* Maternal grandmother had goiter. Mother has goiter and is living, at forty-two years. Father is living and well at forty-four. Five brothers and one sister all have goiter. One sister has not. *Personal history:*

Had ordinary diseases of childhood; grew very rapidly; is six feet four inches in height; had no illnesses aside from the exanthemata. Was rather slow in school; spent his seventeenth and eighteenth years in eighth grade and then discontinued school. Was an ambitious worker at manual work.

Fifteen months ago patient had symptoms of auto-intoxication and sought medical aid for relief of biliousness, malaise, headache and dizziness. In the course of two weeks a mental malady ensued and dementia praecox developed. He was of the hebephrenic type. He was put on vigorous eliminative treatment and put under the care of an attendant and drifted into the praecox state.

February 1, 1915, his *physical examination* was as follows: Head and neck: Eyes show exophthalmos; tonsils are slightly inflamed and hypertrophied; there are small adenoids; tongue coated; breath foul; teeth are in fair condition. Thyroid gland enlarged throughout; right lobe somewhat larger than left. A bruit can be heard over the gland. Lungs negative. Heart sounds clear and strong; 90 per minute; no murmur; cardiac dullness normal; apex beat visible. Abdomen negative. Urine: Specific gravity, 1.024; scanty; no albumin or sugar; indican present. Bowels very constipated. Skin is sallow and moist; muscles are sluggish, flabby and weak. Nutrition fair. Reflexes are normal.

Mental examination: Silly laughter; grimaces; incoherence of thought; has many mannerisms; mumbles his speech; loses the goal idea; has hallucinosis of sight and hearing, and delusions, especially of egotistical nature.

February 2: Blood pressure, 150. Serum injection was given. Magnesium sulphate was prescribed, to be taken in dram doses daily.

February 15: Blood pressure, 120. Pulse, 60. Mental condition clearing.

March 15. 2.5 c. c. of serum injected into each lobe. Pulse, 74. Blood pressure, 126. Mind much improved.

April 1: He resumed his old position in the printing office.

April 15: Blood pressure, 118. Pulse, 72. Mental condition quite normal. At the present time patient is still working; has had no relapse of mental malady and the goiter has completely disappeared.

Case 3. Female, aged thirty-two years, native of Germany; married eight years; has two children, seven and five years of age; housewife. *Family history:* Mother died of pulmonary tuberculosis at forty-five. Has one sister with goiter. Three brothers are well. *Personal history:* Had pneumonia at nine. Entered puberty at fifteen; was not as robust after puberty as before. Present condition began after childbirth, five years ago. First symptoms were nervousness and physical weakness, and pain in back of neck and between shoulders. Then insomnia became troublesome. Could not get to sleep until twelve or one o'clock. Heart became rapid and beat so hard at night while patient was in recumbent position that

sleep was impossible. When up, all exertion and excitement had to be avoided. Pain in calves of legs and weakness of the knees made walking difficult. Later there was a feeling of pressure in throat and some difficulty in control of throat when swallowing. A dull, heavy feeling in the head was annoying. Since last pregnancy the digestion has been very poor. Retarded digestion and fermentation followed almost every meal. Patient is habitually constipated. Frequent attacks of nausea and vomiting of unfermented foods occurred during past two years. Gastroparesis with dilated stomach prevail in this patient. Atony of stomach muscles was proven. There is severe dysmenorrhea since childbirth. Three years ago patient underwent a pelvic operation. For the purpose of relieving the nervousness and dysmenorrhea and prolapsus uteri, a curetment, trachelorrhaphy and anterior fixation and perineorrhaphy were done, and a bilateral oophorotomy. All symptoms were exaggerated by the shock of operation. The prolapsus was more severe in three months than before, and the dysmenorrhea much aggravated. The perineorrhaphy did not hold, and the rectocele is larger than before. Patient is nervous, anxious, emotional, with no self-control.

Physical findings: Head and neck: No exophthalmos; tongue coated, tremor on extension; teeth decayed. Thyroid gland enlarged throughout, most marked in isthmus and right lobe. Chest: Heart, cardiac dullness normal; no murmurs; apex beat palpable and visible; beat, 108. Blood pressure, 118. Temperature, 98.6°. Heart bounding, regular, all sounds accentuated. Some bruit heard in vessels of neck. Lungs negative. Tremor of extended hands. Abdomen: Muscle walls loose and flabby; enteroptosis. Liver: Posterior border two fingers below costal arch. Abdominal aorta palpable. Pelvis: Tenderness over ovarian regions. Bimanual: Perineal laceration of second degree. Prolapsus uteri—cervix at vulvar opening, and both cul de sacs are nearly obliterated. Bilateral laceration of cervix. Lower lip hypertrophied and ulcerated. Mucous membrane covered with muco-purulent discharge, and is inflamed and rough. Right ovary has been removed; the right tube is tender; left ovary prolapsed; left tube swollen and tender. General nutrition poor; skin shows anemia. Blood findings show no relative anemia. Reflexes all normal. *Mental condition:* Memory poor; is irritable, unhappy, cross; emotional temperament.

Treatment: February 13, 1915: 2 c. c. serum in each gland. Patient gained one pound a week after first week. She slept much better after the third day. March 20: Blood pressure, 120. Pulse, 95. Gave 2.5 c. c. in each lobe. Reaction, slight malaise.

April 24: Pulse, 88. Blood pressure, 127. Patient is well in every way. No apparent need of third treatment. Is doing her own work. The prolapsus uteri has disappeared. Uterus in normal position. Leucorrheal discharge has lessened. Muscle tone is normal. Enteroptosis is corrected perfectly. Patient has gained six pounds in two months.

June 3: Blood pressure, 125. Pulse, 84. Feeling fine. Has gained sixteen pounds since first treatment. Sleeps seven hours each night and digests her food normally. Dysmenorrhea has entirely disappeared, and the retroversion has also disappeared. Entire musculature seems to be normal in strength.

SUMMARY.

From my experience with this form of treatment, I feel justified in assuming that a specific immunizing agent against pathological thyroid secretion exists, the exact nature of which we cannot fully explain; that thyroid diseases, however manifested (as to tumor, etc.), are of common origin, and susceptible to a single agency for eradication; that this agency is biological in its essential qualities and is as yet only superficially understood. Although we have had the satisfaction of seeing beneficial results follow in the wake of the serum, we are at present not quite in the light of full knowledge as to the precise principles of standardization, technique of administration and lasting results, a future article on these points being contemplated.

In the 90 cases treated during the past year, we are not ready to report on the permanency, but thus far there has been no recurrence of any case.

In at least 78 per cent. of all cases examined there is enlargement of the heart.

In 90 per cent. of the cases with muscular weakness, of the non-striated as well as of the striated muscles, as manifested by exophthalmia, gastric dilatation, enteroptosis, and prolapsus of the uterus and its adnexa, as well as the weakness of knees and shoulders, this has been corrected by the treatment in from one to four months.

In 90 per cent. of colloidal goiters with no degenerative changes, the gland reduced to normal size in two to five months.

In 50 per cent. of the cases showing fibrous and cystic degeneration of long-standing, the decrease in size has been from one-half to three-quarters in from four to six months, or reduction to point of foreign tissue. In a few cystic cases the goiter has disappeared completely in six months. Many of the cases are still under treatment, but in 90 per cent. of cases that have been under observation for six months the systemic symptoms have been relieved and the goiter has disappeared completely or in part.

25 East Washington Street.

BETTER MILK AT A BETTER PRICE.

CHARLES J. WHALEN, M. A., M. D., LL.B.,
CHICAGO.

The careless conditions that so frequently prevail in the handling of milk, permit of frequent infection with putrefactive, fermentative bacteria, and the consequence is that such milk readily undergoes changes that are deleterious to this especially susceptible fluid. Where milk is produced under strictly sanitary conditions, its germ content is reduced from millions of organisms per cubic centimeter to a few thousand. Such milk has its "keeping" quality greatly increased by virtue of the extra care which is given it in the handling.

The ideal pure milk supply would be to have the milk uncooked, free from disease germs and dirt, and undrugged with chemical preservatives. The conditions involve clean, healthy cows, grassed in summer and properly kept in winter; sanitary buildings; pure water supply; clean milking; prompt and thorough cooling; and distribution in sealed bottles and cans. To accomplish this end, it must be drawn from clean animals, by clean hands, into clean vessels. It must be put into clean containers; transported and distributed by clean methods. It must be kept clean from the moment of delivery until it is taken as food. Clean people, and clean ones only, must handle this delicate fluid every step from the farm to the table. Several American dairies have produced milk clean enough to stand a voyage across the ocean, and to be served as sweet milk to consumers on the other side. The cost of cleanliness is a part of the price of milk. The best test of cleanliness, or one of the best, is the age at which it sours. The very dirtiest milk will not sour at all if a few drops of formalin are added to each quart, but none of us want embalmed milk, even though it be clean. The dirtiest milk will keep sweet for several days if it be thoroughly pasteurized; but very few of us want cooked milk, even though it be clean.

According to the statistics of men in the agricultural experimental stations, many farmers are keeping milch cows at a loss, and in many instances, at the price realized for his milk he can scarcely exist. Until consumers are willing to pay for clean milk, until they are willing to have milk inspected, as it should be inspected, they will get a product having a high fertilizing

and a low hygienic value, and the children will suffer accordingly. To the average milkman, straining the larger particles out of the milk or forcing them out with a centrifugal machine, and then pasteurizing it and the soluble dirt and microorganisms and all, appear all that is necessary. These things will then make the milk keep longer, and, of course make it more difficult for the babies to digest; but, nevertheless, the centrifugal machine and the pasteurizing apparatus appeal more strongly to the milkman as a way to avoid sour milk than more simple, cleanly methods with his cows, barns, and utensils. The ordinary milkman does not realize that pasteurized milk, while having a low bacterial count, generally owes its low bacterial count to the death of countless millions of the more harmless microorganisms, and if pasteurization is not accurately and conscientiously done, it may leave dangerous organisms to multiply.

The matter of cleanliness, the use of aseptic methods, and the immediate cooling process to below fifty degrees Fahrenheit, appeal to him less strongly than the centrifugal machine and the sterilizing apparatus. These things on the part of the milkman are difficulties to combat. The consumer compels the milkman to be dirty, because he is not willing to pay a living price for milk. He is willing to jeopardize the baby's health rather than pay a price for this valuable commodity that will enable the milkman to be clean. Until people are willing to pay a better price for milk, they cannot expect to obtain milk fit to feed to the little children. It will be agreed that it costs more to produce superior milk than to produce inferior milk; therefore, to improve the general milk supply is to advance the price of milk.

The cost of milk everywhere varies according to the cost of land, cost of dairy cattle, the cost of housing and feeding, of milking, packing, transportation and distribution; every one of which items varies from time to time and from place to place. The price of milk is influenced again in one place by the proximity of large creameries, by the condensed milk factories, and by the manufacturers of oleomargarine. The price of milk then includes a number of elements on which the farmer does not exercise an intelligent control. The consumers recognize that several factors enter into the price of milk, but do not be-

lieve the farmers' statements concerning their weight. We may assume, unless otherwise informed, that in housing his cattle the average dairyman is governed by the standards fixed by the consumer. If we suggest that hay should not be kept in the loft above the dairy cattle, that non-absorbent floors are desirable that cows should not be milked in their stables, but preferably in the open air, or in a room built for that purpose, that the milk should not be cooled in the barn or in a room where feed is kept; these suggestions, we must admit, involve considerable expense to the farmers and justify an increase in price—if the price of milk under existing conditions is no more than fair.

The real milk problem which we have to consider is, I believe, not chiefly how a sufficient quantity of milk with a definite percentage of fats and solids may be obtained, but how the inhabitants of a city shall be provided with milk which is clean and free from questionable substances, such as preservatives and bacteria. Two means naturally present themselves: first, passing laws or ordinances requiring much stricter observances or precautions in the production and handling of milk; and second, the treatment of milk in some way so as to destroy the bacteria.

It must be expected, I think, that the major portion of the milk, consumed in some of the larger cities, for a long time to come, will be produced upon ordinary farms, by ordinary men, and shipped by ordinary means of transportation. Those who have given considerable attention to the subject doubt that it would be possible to provide for the needs of a large city should a higher standard be established. We must then not be too sweeping or too impatient in our demand for reforms, or make ordinances or laws that cannot be obeyed. In my opinion the establishment of a perfectly satisfactory milk supply in large cities must be more or less a process of evolution and education. But I believe that a great step forward is not impossible at once.

That clean milk can be produced in ordinary barns, I am thoroughly convinced. At the present time, with the fierce competition and the low price of milk, the farmer is doing perhaps all that he can afford. I confidently believe that if the farmers were to receive, say five to six cents per quart, and were told how to produce clean

milk, many of them would do it. This, of course, would mean that the milk would cost the consumer ten or eleven cents per quart, which is a reasonable figure, all things considered. As a matter of fact, the cost of land, feed, labor, etc., has actually doubled in the last few years, yet the farmer is expected to take the same price for his milk. Until some readjustment of cost takes place, I think that we can expect but little more in the way of care from the farmer. The careful farmer, who knows the cost of his milk, and charges for it accordingly, is likely to find that his good milk is soon crowded out of the market and replaced with that of a poorer quality. A better price will permit better and more wholesome feed for the cattle; consequently a richer and purer product. It will permit the installing of sanitary apparatus for properly aerating and handling the milk.

Working along the line of education, the proper solution of the milk problem will be reached. Whether state or municipal control will be the best in the end cannot be told. Personally, I believe that close inspection can be best administered by the closest co-operation between the state and local authorities. In any case I believe that official supervision should be accompanied, or preceded, by a campaign of education.

The second method of securing low bacteria in milk is by the process of pasteurizing. This has sometimes been suggested as the solution of the milk problem, and it seems to be the easiest available means of reducing bacteria to the number normal in pure milk. But while the process of pasteurization may be very successfully carried on from a bacteriological point, however, it should be regarded only as a means to an end, and not an end itself. From a sanitary and hygienic standpoint, it goes without question that the major portion of the pasteurized milk now fed is far better than ordinary raw milk. But the fact should not be lost sight of that a pure, clean, natural supply of milk is most to be desired.

I believe that in case pasteurized milk is sold, it should be distinctly designated. The ease with which the number of bacteria may be brought within the legal limit renders it possible for unscrupulous dealers to deal out filthy and half-decomposed milk, high in bacteria, and by this simple process destroy the bacteria, so that the milk may be sold as clean milk, conforming to the legal requirements. Yet the sanitary con-

ditions at the farm might be the filthiest, permitting great quantities of manure and dirt of all descriptions to get into the milk. To what extent harmful products (Toxins) may have developed in the milk previous to its pasteurization, and left unchanged by that process, is unknown, but it might be that such poisonous bodies could be present to considerable amount. It should therefore, be borne in mind by every householder that when milk is once spoiled it can by no known process be made good milk, and that pasteurization and sterilization are merely methods for its preservation, and their necessity proves a contamination which might have been avoided. Pasteurization is not an ideal method of dealing with the present day milk.

Pasteurization is resorted to only as a necessary evil and nothing more. The ideal milk supply should be uncooked and free from dirt and disease germs. In a great city like Chicago, with its tens of thousands of children, the problem of clean milk is much larger than it is in small towns. In such a city thousands of children are born every year, and quite a percentage of these same children die annually. We have with us always thousands of children under five years of age, dependent for their living upon milk. These babies are the future citizens of our state. State and city governments are doing much to help in this work. State and municipal officers need the help of every citizen. Certified milk depots are needed in every city, and here is a great opportunity for philanthropists to join hands with citizens in the work of securing clean and wholesome milk. After all from the producer to the consumer the problem comes down to a question of handling. With clean cows, clean men, and clean utensils, if proper care is taken of the barns, clean milk will result. From this point on, the milk must be kept cold, as well as free from contamination, and these precautions are absolutely necessary for the production of high grade milk. Such care costs, both in time and money, but the more intelligent part of any community ought to be perfectly willing to pay for such service if it is conscientiously rendered.

It stands to reason that milk produced under proper sanitary conditions cannot be sold for the same price that is demanded by the purveyor of an unclean, unwholesome, unsanitary quality of milk, and no sane consumer, were he to give the

matter a little thought, would begrudge the difference in price.

Who is to derive the benefit from these onward strides in the dairy world, if not the consumer? And who, more than the consumer, should put his shoulder to the wheel and do his part toward advancing the great work? Demand a better milk and warrant the demand by paying a better price.

25 East Washington Street.

ENLARGED PUBLIC HEALTH ACTIVITIES IN ILLINOIS AND THE RELATION OF THE MEDICAL PROFESSION THERETO.*

C. ST. CLAIR, DRAKE, M. D.

Secretary Illinois State Board of Health,
SPRINGFIELD, ILLINOIS.

In what may be regarded as the early days of public health development, Illinois stood in the forefront and was recognized not only as the leader of public health activities but also as a leader in the regulation of the practice of medicine. This was prior to the day of public health organization and Illinois' enviable position was due largely to the strong personalities of two remarkable individuals. One was Dr. John H. Rauch, first president of the Illinois State Board of Health and a pioneer in state medicine, the second was the able ally and supporter of Dr. Rauch, who, at the time of his death was declared in one voice by the press of the state as "Chicago's most useful citizen"—Dr. Frank W. Reilly.

Those who have been critical of the State Board of Health and its activities have been disposed to point back to the days of these two unusual men and to draw the conclusion that the Illinois State Board of Health has stepped back and retrogressed in more recent years.

It is true that Illinois has lost its place of supremacy among sister states, but I am inclined to believe that there was no retrogressive step. Illinois did not step backward. Illinois failed to speed up and step forward in a day when public health activity was a matter of unusual and rapid development. Illinois, which had been the pioneer, slept on its reputation, while other states awakening to the possibilities of preventive medicine and better regulation of medical practice

*Read before the Southern Illinois Medical Association, Nov. 5, 1915.

have perfected efficient organizations and have secured new and progressive laws.

For a considerable number of years it has been apparently impossible to induce the Illinois General Assembly to pass anything in the nature of progressive health legislation, and the laws affecting the practice of medicine while tending gradually to become stronger have been permitted to remain with certain definite glaring faults. Repeated efforts and sincere efforts to secure the laws which must lie at the very foundation of sound public health administration have met with failure with each succeeding session of the legislature. Up to the late 49th General Assembly Illinois has marked time until she has deserved the common estimate on the part of the medical profession and the nation at large, and that estimate has not been flattering. However, I think that we have now come to feel that not all of the unkind things that have been said have been deserved.

The reputation which Illinois has had in recent years, however, has been embarrassing to our public health officials and of distinct disadvantage to the medical profession as a whole. It has handicapped the State Board of Health in its participation in national health councils and it has prevented securing proper recognition for the members of the medical profession of Illinois in other states. More important than everything else, however, the people of Illinois have been denied that measure of health protection which they have a right to expect and they have been without that confidence in health authority which is essential to satisfactory government.

When I was tendered the appointment as secretary and executive officer of the Illinois State Board of Health, an honor which came to me unsolicited and largely in recognition of 20 years of continued service in the Department of Health in Chicago, I accepted the office believing that I might succeed in developing a close co-operation between the medical profession and the board, and thereby lay the foundation for the re-establishment of Illinois' reputation as a progressive state in matters of public health. I have hoped only to lay the foundation and how well we are to succeed in this respect, I very keenly appreciate, depends wholly upon the degree of co-operation that we are able to develop.

I am deeply sensible of the fact that a state

board of health working at cross purposes with the medical profession can accomplish little which is constructive or good for the public, but can create a great deal of trouble for itself and the medical profession. Equally true is the statement that a state board of health which fails to properly serve the public's interest, the primary object of its creation, brings just criticism upon itself and casts discredit upon the medical profession. But the obligation to serve faithfully does not rest entirely upon the board. The medical profession must be in harmony with the State Board of Health, which is attempting to do those things which the profession must clearly recognize are essential to the public welfare.

The best interests of the public are your best interests and our best interests. The conservation of these interests demands enthusiastic, tolerant and generous co-operation and "co-operation" is the watchword of your present State Board of Health and upon that it will stand or fall.

These remarks are merely in preface of the real subject of my paper, but they have significance which I am sure you will readily appreciate.

As has been generally recognized, during the last session of the General Assembly more constructive health legislation was enacted than at any session in the past twenty years. Some of the laws enacted had been asked and fought for every year for the past decade without success. Some of the laws were new and basic in character. Some of them corrected grave defects in our sanitary code and in the laws affecting the regulation of the practice of medicine. All of these new laws are for the good of the people, contribute to the efficiency of the State Board of Health and are beneficial to the medical profession. The enactment of these laws marks the time when the medical profession of Illinois is again afforded an opportunity to demonstrate that it is not one whit less intelligent and progressive than the medical professions of the foremost states of the Union. And the enactment of these laws gives to the State Board of Health opportunity to afford to the people just as good and just as efficient service as is afforded in our sister states. Let us consider for a moment the significance of these new laws:

The law providing for birth and death regis-

tration is of fundamental importance, and, perhaps more than any other, removes Illinois from an unenviable place in the nation.

The County Tuberculosis Sanitarium law makes it possible for any county so disposed to not only create sanatoria, but to establish and maintain free dispensaries and visiting nurses to meet the enormous problem of the suppression of this disease.

The so-called Fence Law, for the first time prevents Illinois being a dumping ground for the tuberculous cattle of other states.

The law for the prevention of blindness should make very general the use of nitrate of silver in the eyes of the new-born.

Under another new law municipalities are permitted to levy a special tax for the disposal of garbage—a subject now shamefully neglected in many cities of the state.

The sanitation of school buildings has received its first constructive legislative consideration.

A glaring fault in the medical practice act has been remedied by a law which gives the State Board of Health jurisdiction over all medical licenses in Illinois and power to revoke such licenses for cause.

The Epileptic Colony has been assured by liberal appropriation, the state pharmacy law has been strengthened and the state food law made more effective.

Through appropriations made by the last General Assembly, the State Board of Health, which already has very sweeping powers, but which, in the past, had been inoperative on account of insufficient funds, is permitted to perform much broader functions. A much needed bureau of sanitary engineering is made possible; the state may now be divided into sanitary districts each with its own full-time medical health officer; dairy inspection may be extended, especially in the territory outside the corporate limits of cities and villages; control of communicable diseases is made more efficient; branch laboratories are established in the northern and southern sections of the state; the offices of the board have been supplied with modern office equipment, greatly facilitating service, and the free distribution of vaccines, sera and prophylactic agents has been extended.

Beyond a doubt the one new law which is more significant than any other in the public health

development of Illinois, is the Birth and Death Registration Act. This law, drafted along the lines of the so-called model law which is now in force in practically every northern state and in many of the southern states, provides for the registration of every birth and death occurring in the state and imposes a penalty for non-compliance. It asks no hardship of any one, but on the contrary, it will be the means of eliminating much trouble and petty annoyance to which the public and officials in non-registration states are constantly subjected.

It seems hardly necessary at this time and before this Society to discuss the advantages of birth and death registration, for I think that we all appreciate, that aside from the legal advantages of accurate vital statistics, all public health activity, unless based upon mortuary data, must be headless, footless, aimless and ineffective.

The State Board of Health is now, and has for sometime, been engaged in making preparations for placing the new birth and death law in operation on January first, next. Every physician will be supplied, through his local registrar, with the necessary blanks for reporting births. The death certificates will be in the hands of the undertakers, who will fill in all of the personal and statistical particulars called for on the form and will then take them to the physician for certification as to the cause of death. The physician is thus relieved of much of the labor which devolved upon him under the old law.

The new law designed for the prevention of blindness from infections arising at birth must be of interest to the medical profession. This law requires immediate reporting of each and every case of inflamed eyes occurring within two weeks after birth, and requires the attending physician to advise the parents of the new-born child of the dangers of ophthalmia neonatorum and to recommend the use of an efficient prophylactic, such as will be supplied free to physicians by the State Board of Health through its distributing agents. Such a prophylactic has already been supplied to the various state board of health agencies and physicians will find this package one of the most convenient yet devised for the ready administration of nitrate of silver to the eyes of the new-born child.

The value and necessity for this law are recognized when we bear in mind that from 12½

per cent. to 50 per cent. of those persons seeking admission to schools for the blind, have become dependents through ophthalmia neonatorum, and when we consider that of 2,556 cases collected by the United States government, birth infection was responsible for blindness in 25 per cent. of cases.

Through its increased appropriations the State Board of Health has been able to extend its diagnostic laboratory service, and there are now available to physicians of the southern and northern extremities of the state, branch laboratories which materially facilitate early reports upon cultures submitted for diagnosis. One branch laboratory has been established at Mt. Vernon in Jefferson county, and the second at Chicago. Culture shipping outfits have been supplied to all distributing antitoxin agents from whom physicians can secure them without cost.

In the main laboratory at Springfield, in addition to the laboratory diagnoses of tuberculosis, typhoid fever, diphtheria and malaria we are now making Wassermann tests for indigent patients without charge.

As you all know the State Board of Health has for distribution diphtheria antitoxin and typhoid vaccine and, after January first, the Board will be prepared to supply smallpox vaccine to physicians without charge.

Among the most important new features of the Board's activities has been the revision of the rules and regulations for the control of communicable diseases. It is not possible for me to enter into details regarding these rules, but I feel that all thoughtful physicians will endorse the action of the board in increasing the number of communicable diseases which must be reported to the health authorities, and in placing all the responsibility for the establishment and raising of quarantine upon the health official and relieving the physician of that thankless burden and embarrassing responsibility.

Under these new rules the local health officer, and he alone, is authorized to terminate quarantine. The Board desires to allow the attending physician the widest possible latitude consistent with public safety in handling cases of contagious disease, but the Board is very insistent that there shall be no violations of those rules which now are uniformly applicable throughout the entire state. The responsibility of enforce-

ment of these rules rests upon the public official charged with the protection of health in each community and in this the thoughtful physician will recognize the enormous advantage to him in being able to place the responsibility on the shoulders of the health officer.

For the purpose of rendering more prompt and efficient service to the medical profession and to communities in which contagious diseases have become prevalent, the State Board of Health is now organizing a new district health service, presided over by an expert epidemiologist who shall have four full-time medical health officers as his assistants. It was hoped that sufficient funds would be appropriated by the last General Assembly to create a much larger force of district health officers, but this seemed impracticable. In the opinion of the Board the creation of this service as a phase of its work is an enormous step forward and that this relatively small force of especially qualified men will be a marked improvement over the loose organization lately abandoned.

The new feature in public health activity in Illinois, which is one of the most important in my opinion, is the bureau of sanitary engineering which is now practically organized under the supervision of an experienced sanitary engineer and which stands ready to extend expert service in solving the sanitary problems of the various cities, towns and communities. The department of sanitary engineering will give assistance in the solution of all problems of water supply, sewage disposal, ventilation of public buildings, garbage disposal and kindred municipal and sanitary engineering subjects.

Within the past few years the molding of public opinion and popular education have become perhaps the most important factors in progressive public health work, and the State Board of Health has felt that the development of its educational division is one of the most important features of its work. The publication of the monthly bulletin of the Board designed to meet the popular taste rather than to contain technical material has been credited with very general approval.

The Board has attempted to co-operate with the various county medical societies of the state and with other organizations in extending its educational efforts. Perhaps all who are within my hearing at this time have seen our popular public health exhibit which we have on display

in connection with this meeting. This exhibit has been in very strong demand with county and state fair authorities, Chautauqua associations and civic organizations, and during the season it is constantly on the road.

It has been our thought that it might prove advantageous to local and county medical societies to have this exhibit placed in their respective county fairs through the agency of the society. If this idea strikes you as desirable, such an arrangement can be made through the offices of the Board at Springfield. In fact, I am impressed that it would be of benefit to the local societies and would create a wholesome spirit in the various communities if the public health activities could have their inception very largely with the local medical profession.

In addition to the traveling exhibit we have educational motion pictures and lantern slides bearing upon public health subjects which we would be very glad indeed to lend to medical societies for purposes of public meeting. It is clear to you that it is quite impossible for me to enumerate all of the newer activities of the State Board of Health in the short time now at my disposal, but I cannot close these rather desultory remarks without referring to a subject in which I know all of the older practitioners of Illinois, many of whom reside in this section, are deeply interested. I have in mind the matter of reciprocity of medical licensure between the various states, provision for which now is made only for those persons who have been licensed by examination since July 1, 1899.

Under the prevailing provisions of the law the young man fresh from medical school and utterly void of the practical experience which makes the big, well rounded physician, may be licensed in other states through reciprocity, while the older physician, perhaps this young man's preceptor or teacher, is accorded no such privilege. There is a disposition in this day of rapid progress to attribute all virtue and knowledge to the younger generation and the tendency to relegate the older men to the side lines before their time. I cannot feel that the man who is licensed prior to 1899 is less competent, less qualified or less worthy of reciprocity with other states, than the graduates of more recent years. Under the existing state of affairs reciprocity is denied approximately 75 per cent. of the medical profession of Illinois and

accorded to but 25 per cent. made up of the younger generation.

After giving this subject serious consideration the Illinois State Board of Health has drafted an amendment to the Medical Practice Act, which, if adopted, will extend to all legally qualified, reputable practitioners in the state the right to license by reciprocity in those states with which Illinois may establish such an agreement.

It is in presenting such matters as this to the examining and licensing bodies of other states, that we wish that the standards of Illinois had always been so high that our recommendations would be regarded as more authoritative. It is to be hoped that the spirit of co-operation between the medical profession and the State Board of Health which will manifest itself in the future, and the mutual confidence and respect entertained by the medical profession and the medical department of the state government in and for each other may be the best evidence to those outside the state and within the state that Illinois is to again assume leadership in matters affecting public health administration and regulation of medical practice.

RECIPROCAL STATE LAWS REGARDING THE MARRIAGE OF DISEASED IN- DIVIDUALS AND MENTAL DEFECTIVES.*

A. M. CORWIN, M. D.
CHICAGO, ILLINOIS.

We need not be primarily occupied with the study and care of the insane, epileptic, criminal or feeble-minded, nor need we specialize in the treatment of venereal disease to explain our presence at this notable congress year after year.

Whether alienists, sociologists, physicians of diversified practice or plain laymen, we are here to guarantee our larger interest in human welfare, both of today and tomorrow. As physicians, we may not certify as camp followers in any movement to better the race, but must *lead*, especially where prevention of disease is concerned.

Though the economist and philanthropist has often preceded us in the field of legislative reform, our real place is on the firing line in the

*Read at meeting of Alienists & Neurologists at Chicago, July 16, 1915.

fight for social betterment. Indeed, the laws of biology which we physicians claim as foster children, at least, are more and more influencing our social statutes, as they should, to the exclusion of blind fanaticism, smug tradition or mere sentimentality.

There is a wide activity under the stimulus of modern science to clarify our ideas of marriage and divorce, as they are intimately related to the hereditary transmission of disease, degeneracy, pauperism, and the tendency to crime. It is to emphasize the dominance of heredity in the increase of our undesirables, and to touch some points of our state laws dealing with prophylaxis that we present this paper.

The thought of interstate reciprocity in marriage laws and the need of it naturally follows from what is to be said. There is another conclusion which is forced from a consideration of the wide variation which exists in our legislative provision, which may as well be stated here, and that is that an interstate commission should, in our judgment, be appointed by high authority, say of the governors, made up of scientists, economists, physicians, lawyers, sociologists and legislators, to consider all phases of the whole question of matrimonial laws and the care and control of the unfortunates which spring from marital mismatching, and it may be to formulate a propaganda of education and frame model laws for passage in the several states.

Furthermore, since opinions differ as to the exact influence and the manner in which heredity arrives at its varied results in the multiplication of our socially unfit, it would seem high time that physicians with a vast amount of clinical material under their control in state institutions, and in touch with an immense number of unfortunates, criminals and delinquents and defectives who pass through the hands of our courts, should work in more organized fashion to study the complicated problems, and by the establishment of a Bureau Clearing House, pile up facts for analysis and conclusion.

The Record Bureau of Eugenics, founded at Cold Springs, Long Island in 1910, is working along this line, under the guidance of laymen, Davenport, president, and Laughlin, secretary. Its results have been criticized by alienists and neurologists as "long-haired." But while we may not agree with the dictum of Davenport, that

epilepsy could be practically wiped out in so many decades by thorough segregation, sterilization and other provision of the eugenic plan, still we must take off our hats to any such honest, able and enthusiastic organized effort to find causes and effect prevention.

Are insanity, feeble-mindedness, epilepsy and the criminally disposed from birth on the increase? Statistics and opinions frankly differ, with the burden of proof on the side of the negative. But that there are too many of these unfortunates, and that they do menace posterity by sex union, is not to be doubted.

To do something constructive, to stop the over-production, is palpably our duty. How shall we do it?

First, by better team work of you alienists and neurologists and other scientific men and women, as suggested. Second, through some group of students, with authority of the state, preferably inter-state authority, as suggested. Third, by the passage of laws to plumb with the facts, and, fourth, by continued education of the people, so that ignorance shall not excuse.

To compass these ends must necessarily involve many decades of effort. To do *our* part is the most obvious duty in sight. Much good legislation has been obtained, mostly within the last ten years. Some of it, as in the Wisconsin law, is impractical. But though it seems reasonable that public opinion should be fairly crystallized prior to the passage of laws to make them efficient, perhaps more productive education of the people can be compassed through propaganda, discussion, and the necessary lobbying to obtain the passage of laws than by any other means of publicity. Therefore, we believe that our various state legislatures should be discreetly bombarded from this direction at their successive sessions, no matter what shall be the unfavorable fate of our suggested measures.

As to the evidence of heredity and the increase of insanity, epilepsy and feeble-mindedness, Dr. Charles Dana, referring to the fact that in Indiana the institutional care of the insane has prolonged the average insane lifetime by some years, says: "For twenty-five years the explanation of this increase of insanity has been that more cases were observed and more victims kept in institutions than formerly, and this is still the explanation."

Professor Irving Fisher of Yale, also remarks upon this point: "It is my opinion that the increase is a real one, as is to be expected, not only from the strenuousness of modern life and increase of city populations, but also because more feeble children are nursed to maturity and more invalid adolescents are kept alive to propagate weak constitutions, or to fall victims themselves to alienation; the period of life susceptible to insanity is longer." It has been estimated by H. H. Laughlin, from statistics, that the varieties to be eliminated because of their menacing hereditary potentialities form ten per cent. of our population, and that those defectives which are permitted to reproduce their morbid germ plasm increase their kind at a rate in proportion to the general population plus five per cent. each half decade, and he figures optimistically that with a proper eugenic program followed out the unfit would be reduced to 1.32 per cent. of the population at the end of seventy-five years. Of course, this sounds encouraging, though purely idealistic, and hypothetical. But it is a good goal at which to aim, rather than at no goal at all.

The tendency in modern times is to earlier commitment of the unfit and a longer term of segregation. The influence of our psychopathic laboratories and hospitals upon more definite diagnosis and classification, particularly Chicago's work and plans in this field, will be followed with increasing interest throughout the country. Our own new Illinois laws, just passed, are in line with better state control of these cases. For these laws special credit is due Dr. Edward Ochsner, chairman of the Board of Administration.

Considering the fact that many forms of insanity and epilepsy, many forms of feeble-mindedness, idiots and imbeciles are incurable, as regards their overt characters and that their power to transmit grave morbidity is beyond question, society, upon the one hand, cannot escape the responsibility of assuming the complete care of them in a systematic and humane manner, and, upon the other, society is bound to protect herself against them through enforced segregation during their reproductive period, by putting ban and penalty upon their marriage or sex union, or through other means.

Some of us are not afraid of the word eugenic. We may even be thorough advocates of proper

application of asexualization by fiat of law. We recognize, however, that a mere vasectomy, performed upon an incorrigible, moral pervert, may answer biologically in preventing reproduction, but that his consequent security might well make him more bold in attack upon virtue, and a greater menace as a propagator of venereal disease. For the rapist and certain other dangerous sexual perverts, wont to run at large, who will say that castration is not an appropriate remedy, not so much in punishment as for society's protection?

To all such radical legislation objection is made that it is utopian; cannot be enforced; that it is inhuman and intolerable; that it flies in the face of Providence, and violates the principle of personal inviolability, involved in the fourteenth amendment of the Federal Constitution, guaranteeing to every man equal protection of the law. So does a sojourn in the penitentiary or madhouse. So does compulsory vaccination and the law of quarantine. So do handcuffs override personal inviolability for the cause of the public good. The well-being of society is so far superior to so-called personal liberty in many directions as to make such objections puerile.

Under the California sterilization law, prophylaxis against reproduction of the unfit has been exemplified in 268 patients from one to sixty years of age, in both sexes, and covering the following cases:

Dementia precox.....	52
Manic-depressives	106
Alcoholic psychosis.....	33
Epilepsy	22
Imbecility	32
Confusional and other forms...	16
Paranoia	3
Unclassified	14

These figures are of the report of Dr. Holch, general superintendent of the State Hospital, January 30, 1912.

Sterilization is a permanent guarantee against danger of reproduction after segregation ceases. About a thousand of these operations have been performed in the United States. These pioneer measures are, of course, experimental, but are blazing the way in the right direction. It is safe to say that public sentiment will, within a few decades, back up the principle of prevention in all our commonwealth.

"Plato, more than two thousand years ago, warned against the degeneration in store for any nation which perpetuated the unfit, allowing the citizens to breed from enervated stock."

Karl Pearsons, director of the Galton Laboratory for National Eugenics, in his lecture, Series 14, 1912, shows by numerous examples the inheritance of congenital cataract, deaf-mutism, general degeneracy, and so forth, and sums up the situation:

These are individual illustrations of what is happening because the intensive selection of the old days has been suspended. That suspension is partly due to medical progress. You are enabling the deformed to live, the blind to see, the weakly to survive. And it is partly due to social provisions made for these weaklings, that the feeble-minded woman goes to the workhouse as a matter of course, to give birth to her fourth or fifth illegitimate child, while the insane man, overcome by the strain of modern life, is fed up and restored for a time to his family and *paternity*.

In our institutions we provide for the deaf-mute, the blind, the cripple, and render it relatively easy for the degenerate to mate and reproduce their like. In the old days without these medical benefits, and without these social provisions, the hand of Nature fell heavily on the unfit. Such were numbered, as they are largely numbered now, among the unemployed, but there were no doctors to enable them to limp through life, no charities to take their offspring or provide for their necessities. A petty theft meant the gallows; unemployment *starvation*; feeble-mindedness meant persecution and social expulsion; insanity meant confinement, with no attempt at treatment. To the honor of the medical profession, to the credit of our social instincts, be it said we have largely stopped all this.

Every infant has the right to live, but not necessarily the right to reproduce its kind. For in spite of the complexity of factors entering into the makeup of each individual, no one may doubt that biological inheritance is operating to-day as it did in primitive man. Detailed studies of individual lines of inheritance, in accord with the formulæ of Mendel, leave little doubt of it.

But notwithstanding this data and the evidence derived from plant and stock culture, added facts from hospitals, asylums and private records are needed to clear up the unsolved mystery of transmission from parent to child—not only of direct characteristics that are transmitted in kind, but of those occult potencies of character that may be expressed in one of many forms.

That eugenics is to revolutionize things in two or three decades and breed a perfect race need not

be seriously debated, in spite of the enticing figures of Davenport and Laughlin. But if she has even begun to wipe out the grossly unfit, why bar her attempts at progress? We would stop the suffering of the living, why not prevent the suffering of the unborn? While we talk and plan eugenically, it is well to put a shoulder to the wheel with those who lay all emphasis upon environment. They rejoice not more than we at the progress men make to rid themselves of that alcoholic environment which has in turn done so much to retrograde heredity. Fifty per cent. of all the idiots in the Massachusetts State Hospital at one period were children of intemperate parents. Notwithstanding an enormous array of clinical facts regarding the relation of dipsomania, chronic drunkenness, various forms of insanity, feeble-mindedness, idiocy and imbecility, criminality and various psychoses in parents and their reappearance in the offspring, laws are wanting in a number of states to prevent the union of such unfit, or even to provide for the product.

Considering the immediate danger of infection of husband or wife from syphilis or gonorrhea through marriage, it is fair that one or two reputable physicians' certificates of good health should be required of man and woman alike. Is the medical profession not prepared to assume that responsibility? The fact that the Wisconsin law for certificates is a dead letter, because it provides for unpractical laboratory tests, etc., should not deter Illinois from making a better law. The only physician who would oppose such reasonable prophylaxis is the purely selfish and unworthy surgeon who would see in it a decreasing demand for his operative interference. But so long as *morality* is what it is, he would probably find enough victims among those who would contract their infections after marriage, for later contamination.

While no law can at present be expected against the marriage of those with pronounced family taint of tuberculosis and cancer, it is not too much to ask that the people be better informed regarding the hostile heredity nurtured by these diseases. Life insurance companies, with financial loss in jeopardy, are fairly scrupulous in these matters. But in choosing children we ask not what manner of tree it is that shall bear that fruit, but with reckless hand plant our family

orchard with briars and complain at the unwholesome crop.

The full purse and social prestige seem to outrank the happiness of the nursery. How shall we hope to avoid in the children the sins of the parents?

To so frame our marriage laws and laws for the care of derelicts is the business of all our states to lessen the worthless one-tenth. Meanwhile we may have time to better the breed of the higher social levels, as we better the breed of our Persian cats. Then perhaps by tabooing bad immigration and further improving our environment and habits of life, we may rise to immeasurable efficiency and happiness by the time our transmitted plasma potencies find themselves planted in the well-ordered biological arrangements of posterity.

THE INTRA-SPINAL THERAPY OF SYPHILIS OF THE NERVOUS SYSTEM.*

R. B. H. GRADWOIL, M. D.,
ST. LOUIS, MO.

About three years have elapsed since the publication of the method of treating syphilis of the nervous system by means of salvarsanized serum along the practical lines advocated by Swift and Ellis, who followed up the experimental work of Marinesco and Weehselmann. In this period much work has been done and many observations made, some conservative, some overly enthusiastic and others tinged by rank prejudice. It is the present purpose of this paper to give an unbiased and conservative estimate of the value of this method, based upon a personal experience in one hundred and twenty-five cases which have been given treatment for periods of time varying from six months to two and one-half years, all the cases having received 750 injections. I shall also take occasion to state the experiences of other workers with this method. I might add that my first experiences were reported by me in two papers, one presented before the Society of Biology of Paris (*Competes rendus heb. des Seances de la Société de Biologie*, July 18, 1911); the other presented before the Cincinnati Academy of Medicine (see *Lancet-Clinic*, July 11, 1914). I might add that my conclusions regarding the

rationale and indications for the treatment are no different from those advanced in 1914—my ideas of the interpretation of the sero-biology of the spinal fluid in these cases, however, have been considerably modified. It is not my present purpose to present before this body a long series of case reports. Rather would I only in a general way discuss the question of syphilis of the nervous system and its proper treatment.

The opinion of experienced workers in syphilis has been for some time that the treatment of syphilitic complications of the nervous system by means of the regulation or older treatment is usually a failure and without results of great value. There are still some who hold that the older methods of treatment were followed by just as good results as those we are now obtaining with salvarsanized serum—this is not at all in accord with the writer's views nor with those of other workers who have sought in the intraspinal treatment a more hopeful means of affording relief than was afforded by the older methods. We must assume then, that the regulation methods of the past have been of but little value in the treatment of tabes, tabo-paresis, cerebrospinal syphilis and paresis. The method of introduction of salvarsanized serum directly into the subdural space is based upon the idea that medicaments introduced in other ways, subcutaneously, by mouth, or intravenously, do not effectually reach these remote parts. Inasmuch as salvarsan in solution is rather irritating, it cannot be applied directly to the nerve tissues. Attempts to do so such as are represented in the method of medication by Ravaut of Paris, who introduces neosalvarsan directly into the spinal canal, have been followed in some cases by severe reactions and in others by death. They are, therefore, mentioned only to be condemned. The method which we would, therefore, endorse from the standpoint of "safety first" is the method of salvarsanized serum "in vivo" as opposed to Ravaut's method "in vitro." Some have claimed that the results of the salvarsanized serum in spinal and cerebral syphilis cannot possibly be due to the salvarsan present in the serum, inasmuch as but a small fraction can possibly be contained in the twenty or thirty cubic centimeters of blood serum which are injected at each treatment. Others have shown that chemical tests for arsenic are not always positive in the serum

*Read by invitation before the Effingham County Medical Society, Effingham, Ill., Sept. 14, 1915.

withdrawn one hour after intravenous medication. This has since been shown to be erroneous as arsenic can be found constantly in all such samples of serum. Others have insisted that the good effects that come from this treatment are entirely due to the intravenous medication and are in no sense due to the spinal application of the serum.

In other words we have a number of opponents to the treatment; first those who claim that mercury and iodide of potassium alone suffice to give as good results in tabes and paresis as salvarsanized serum; secondly, those who claim that ordinary intravenous application of salvarsan suffices to restore all that can be restored in these afflicted persons; and thirdly we have a class of opponents chief of whom can be found Schwab who in his critical review of this subject published in the *Interstate Medical Journal* for January, 1915, takes occasion to severely criticise some who have written on this subject mainly because he thinks they are not properly equipped from the standpoint of clinical skill to interpret the results of treatment. He represents what might be termed a self-appointed neurological judge and jury, sweeping aside with one critical blow of his pen the results of extended and painstaking clinical and laboratory observations. As Riggs states in his excellent paper which appeared in the *Journal A. M. A.*, Sept. 4, 1915, referring to Schwab's opinion that "clinical improvement in paresis as a result of this treatment is a thing that no one of recognized standing has as yet asserted," "these statements are amazing in the light of the facts quoted by him (Riggs)," namely the statements of Barrett, Blumer, Hough, Taylor, Cotton and others. Unfair and biased criticism does as much harm in hampering the proper attitude of mind of the profession in reaching a conclusion with respect to a new procedure as does over-enthusiasm. Both are dangerous and reprehensible.

In the light of over three years' investigation, much that has been claimed "pro" and "con" regarding this new method of medication can now be set in its proper place. The writer wishes to make his argument in favor of this procedure upon what he believes is an extended and careful study of syphilis both from the standpoint of the clinic and the laboratory. In first order I wish to state that in my hands the results of

intra-spinal treatment of tabes and cerebrospinal syphilis have been most gratifying. In many cases of tabes clinical improvement has been noted of so rapid a character and of so permanent a nature in some cases (as long as two years) that no comparison with the older method of treatment with mercury or with simple intramuscular or intravenous salvarsan can be tolerated. Mind you, we do not refer at all to the sero-biology of the process when we speak of this remarkable improvement. There was a time in the early days of this Swift-Ellis method when the thought of sero-biological improvement seemed to entirely govern the question of the patient's fate. It is not altogether so at the present period in the writer's experience. We have seen clinical improvement in the shape of quick increase in weight, loss of tabetic pains, better response on the part of pupillary reflexes, better bladder control, better walking, decrease or cessation of Rombergism and considerable change for the better in the condition of the sexual power. In one case of marked ataxia we have seen after six injections an almost complete return to the normal gait. Time forbids me going over, one by one, the change in appearance of the symptoms in many of these cases. It is our purpose here, moreover, not to make case reports but to catalogue conclusions. In regard to tabes, therefore, we have seen results that can find no analogue in the writings or observations of the past with respect to mercurial medication.

In regard to cases that might be called paresis we can say that we have seen very definite changes in some of these cases when treated quite early in the process. These might be termed natural remissions. We are ready to admit that the remission of a paretic and the improvement under salvarsanized serum medication closely simulate each other and time alone will differentiate them. We must record the fact, however, that several cases of our series which were clinically called "paretics" have returned to normal so far as mental integrity is concerned, so far as ability to perform the numerous difficult duties of daily life are concerned. Our position inclines towards the belief that many cases of so-called paresis are cerebrospinal syphilitics, with but superficial meningeal involvement, and that in this type the effect of salvarsanized serum is ex-

cellent. We are still inclined to doubt the hope of success in deep-seated degenerative conditions of the brain with this form of medication.

We have seen some very unique types of spinal syphilis, both meningeal and deep, including one case of gumma of the cord with complete and total paraplegia which responded to four intraspinal injections most promptly, the patient having complete recovery in six weeks so that he was able to resume his occupation as coal-miner without any recurrence now one year after cessation of treatment.

The question of sero-biological control of these cases by means of the Wassermann, the lymphocyte count, the globulin tests and the gold test is both interesting and important. However, just as we have decided with respect to the Wassermann reaction of blood serum and its place in the domain of prognosis, so must we decide its position in the therapy of spinal syphilis. There was a time, now happily long since passed, where one or two negative Wassermann reactions were considered proof positive of the "arrest" of a syphilitic general process. The treatment of syphilis of the nervous system by means of salvarsanized serum should be supplemented by careful spinal fluid examinations. The Wassermann test should be found consistently negative in order to convince us that the process in hand is "arrested." But there should be no cessation of treatment simply because the Wassermann has resulted negatively. We have found time and again patients with negative fluids after a few injections and then we have found the reaction loom up as positive as ever on subsequent examinations. In other words, we have seen it become positive after having been negative, even though the march of the clinical improvement has been steady and uninterrupted and the treatment was continuous. It would have been a calamity and would have cost the patient many days' loss of time had treatment been stopped on account of a negative Wassermann. It is manifestly absurd to cease treatment of an ordinary uncomplicated case of syphilis on the basis of a negative Wassermann. The appearance of a negative Wassermann is well and good in blood serum, but it does not mean at all that the clinician should thereafter abandon treatment and wait for it to become positive. This foolish practice has been followed by some, but is, of course, not to be

recommended. We have unfortunately no guide, no mathematical measure of the length of time, of the amount of treatment, of the number of negative Wassermanns a patient should have before cessation of treatment. As medical advisers in whom the intelligent and anxious-for-cure syphilitic patient places his trust, we stand unable to tell him in exact and positive terms, just when he is "cured." I am speaking now of the uncomplicated and "ordinary" case of syphilis. How much more difficult is it to determine when to close treatment when that question comes up to us from our tabetic patient who has made a great improvement under intraspinal medication? We have had a reduction of the Wassermann from positive to negative, we have seen the lymphocyte count go steadily downward. We have seen the excessive amount of globulin and albumin disappear. We have witnessed the various measures of improvement already noted. When shall we cease firing? What shall be our guide in stating when the process is arrested? There is no guide, there is no absolute test whose negativity once or twice repeated means cure. Only there remains for us the advisability of telling these patients to remain under observation for a long period of time and increase the number of injections as clinical signs reappear or grow worse. No single laboratory test can lift the responsibility from the clinician's shoulders of continually holding the spinal syphilitic under observation. But will he patiently be held, is the question?

A serious handicap to the proper carrying out of therapeutic procedures with the "modern" syphilitic—and this includes the spinal syphilitic as well—is the rather well disseminated erroneous idea on the part of the public that the physician no longer is the arbiter as to what constitutes the proper treatment of this disease, rather is it the patient himself. Witness the rather remarkable and by no means infrequent request of a self-confessed syphilitic on entering the consulting room "to give me a shot of 606" and "what will the charge be for one or two shots of 606?" This is just as remarkable a request and attitude of mind as if the patient would walk into a physician's office and casually request a definite prescription for malaria and the charge therefor without even requesting a diagnosis. Naturally such a request must be

refused and the patient gently but firmly informed that the number of injections, their frequency, the use of other medications, etc., must be left to the medical attendant. Some of our luetic friends would transform us into day-laborers or peddlers of salvarsan if such requests are acceded to. I regret to state that some physicians have allowed themselves to be placed in this false position by their patients. This should not be tolerated, for no self-respecting physician would allow his uninformed patient to dictate the kind and method of treatment of any disease. And so it is with the spinal syphilitic too. He wants to know exactly how far he is to go with the injections, usually on the side of the minimal number of injections, without regard as to his future. He is by all accounts a patient who looks at the present; the future may take care of itself. There has been too much pseudo-education of the syphilitic both as regards the nature of his disease and the hopefulness and hopelessness of treatment. Every corner-loafer or club chatterbox prides himself on his knowledge of this, of all diseases. Boiled down, this knowledge is of two extreme, and, of course, erroneous types: one "shot" of 606 will cure, or else syphilis is incurable; salvarsan will kill every patient, or mercury will get in the bones and disintegrate them, so let the whole affair go to smash. Of course, there is another class which must not be forgotten, the class who advise their infected friends to take the first train for Hot Springs and take the six weeks' "cure" which will rid them once and for all of this inconsequential malady.

These are some of the lesser obstructions which we meet with in practising among syphilitics, and yet their importance is by no means small. We must bear with these people in their misguided beliefs and attempt to set them right. Their mental confusion needs correction before our specific therapy can be properly applied and continued to a successful termination. Tact and kindness and a firm hand is necessary to hold the syphilitic to his treatment.

The psychology of the syphilitic is an important factor to be reckoned with at all times. He is a great fellow to "throw physic to the dogs" when he is feeding finely and to overload with physic when he is feeling ill. It is exceedingly difficult to handle the uncomplicated syphilitic

through three years of adequate treatment. He is constitutionally opposed to medication when there are no signs of trouble, especially when he, like all his fellows, had the proverbial "little knowledge, etc.," and has been thoughtlessly told by some friend that a blood test when negative means a cure. The syphilitic today is an unfortunate and fortunate man, unfortunate because his mental make-up cannot grasp the fact that syphilis is a chronic infectious disease and that the disappearance of symptoms and a single negative Wassermann mean nothing; fortunate, that scientific investigation has shown the profession that repeated salvarsan and mercury medication is all-important, supplemented by repeated serological examinations, and that many years' observation are necessary before the syphilitic can be released. And so it is with the spinal syphilitic: he too, must be held in bondage and must not be released until an adequate period of time has elapsed. It is here that the artistry of the medical attendant must prevail, lest plain speaking be followed by discouragement and abandonment of treatment. We stand between Scylla and Charybdis, we must be honest with our patients and tell them no lies, yet we must not appall them with the thought of spending their lives in fighting their spirochetal foe, and that to no resultant good ending.

From what has gone before we are justified in stating that the use of this form of treatment is justifiable, is harmless and gives results not obtainable with any other form of medication hitherto in vogue. Perhaps better things will come and more notable improvement will then follow.

803 N. Garrison Ave.

LOSS AND WASTE FROM INADEQUATE AND INCONSISTENT PLANNING OF STATE HOSPITALS.*

RICHARD DEWEY, M. D.,
WAUWATOSA, WIS.

There are many ways in which the charitable institutions of the state suffer from defects in the plans under which they are constructed and administered.

This is not to be wondered at when we con-

*Read before meeting of alienists and neurologists at Chicago, July 14, 1915.

sider the problems entering into their location and operation. The engineer, the architect, the hygienist, the economist, the philanthropist and the legislator must unite their efforts if the result is to be praiseworthy. The last named, the law-maker, plays the leading role. He is the fountain-head of the all-important appropriation and formulates the conditions for all the others. If he is wise, disinterested and public-spirited, he will combine the wisdom not only of the serpent, but the cleverness of all the experts with his own. If he is a log-roller, and an ax-grinder and in affiliation with the lobby, we shall see his handiwork in the unsuitable and unhygienic location, the slipshod construction, the wasteful and perhaps corrupt administration. In these institutions the creature out-lasts the creator, and they stand for generations to do credit or bring disrepute upon the people who brought them into existence. It is important then that the plans adopted should stand the test of time, and be a guide, rather than a warning for future years. Yet we do not always learn by experience, and the same error has sometimes been repeated over and over—for instance; in the case of each of the first three state hospitals of Illinois, it was found that that most important essential, the water supply, had been overlooked and was entirely insufficient; and in two of these instances the oversight has not been wholly remedied to this day, nor can it ever be.

One source of waste and of various other difficulties in these institutions grows out of the tendency to adopt ambitious architectural plans. The desire for display and stateliness simply as a tribute to local pride has been almost constantly in evidence. The first principles of appropriateness in construction of buildings for masses of dependent poor, it would seem, should be simplicity and economy. We would expect that in providing houses and homes for the homeless poor, grandeur and stateliness would be out of place and every dollar would be made to go as far as possible. But the aim of the legislator and the architect has often seemed to be to minister to local pride. Altruistic thought has made its way slowly in public benevolence. It might be said truly that the state institutions have been evolved "of the office-holders, by the office-holders, for the office-holders," rather than "of the people, by the people, for the people." The inmates, sup-

posed to be the first beneficiaries, were the last to be thought of, and were at times even victims of the exploitation to which their helplessness renders them liable. Actual corrupt management, like that prevailing in Cook county in the seventies of the last century, is rare today. In that era, money that should have provided shelter for the unfortunate disappeared wholly from view, leaving nothing but scandal behind. In the later decades of the nineteenth century, however, a better spirit prevailed and the movement for detached or so-called "cottage" construction began also to tend toward simplification and economy.

The grand central buildings of these institutions, imitating in some cases the Greek Temple, in others the stately homes of the wealthy, are still to be seen in all parts of the country. The idea of providing a home for the humble denizens of these buildings was not as much thought of as the creation of an imposing façade. A model for these institutions in the early times was the great state hospital at Utica, New York, with its colonnade of magnificent monoliths suggestive of the Athenian Parthenon. The money expended in this manner would have built several comfortable houses for the needy insane whose only shelter was the almhouse or the jail. Another example of this display was the Buffalo State Hospital. A famous architect was engaged to draw the plans. A brown stone palace was erected, beautiful in its proportions, with two elaborate towers upon the central building, the cost of which was \$70,000 each. They were things of beauty and delight to the eye, but if they had been omitted, or even *one* instead of *two* had been provided, 30 or 60 additional patients could easily have been provided for.

A similar waste was shown in the Anna State Hospital of Illinois, where, at a cost of \$30,000, two ornamental iron stairways were built side by side in the central building where all possible requirements would have been easily met by a single stairway, and, thus, 15 or 20 additional patients could have been provided for.

At Peoria, Illinois, thousands upon thousands were expended in buildings erected over an abandoned coal mine, before the discovery was made, by the settling of the walls, that the buildings must inevitably crumble to ruin and be abandoned.

A very curious incident occurred some years

ago at the great Asylum for the Chronic Insane at Ovid, New York, an incident growing out of the effect of this stately architecture upon the feeble mind of one of the humble patients; a Scandinavian woman mistook the structure she lived in for a palace and wrote her family in the old country, informing them of her great good fortune. She stated in her letter she was living in a royal residence with a retinue of servants around her and recommended that her family come to her immediately in this wonderful new country where she would now be able to keep them in ease and comfort far beyond what they had ever known at home. The letter was written in her native language and no one knew of its contents until a few months later when her family, at least 2 adults and several children, appeared on the scene and applied for admission, having landed from a steamer in New York and come to claim the benefits that had been promised them by their deluded relative!

The failure to fix at the outset the capacity of the institutions, and adhere strictly thereto, has been a fruitful source of loss by reason of the remodeling and tearing down and building over thus necessitated.

The capacity of institutions was a subject of controversy for half a century. The maximum number approved by the American Association of Superintendents, up to 1870, was 250. This number was later increased to 600; then it was allowed that even as many as 1,000 might be under one management. Later, all effort to restrict numbers was given up. Today there are many institutions whose capacity is 2,500 or 3,000, and these, like all the others, are almost without exception crowded to excess, having been remodeled and rearranged almost beyond recognition. It must be said the ultimate capacity of state hospitals, like the price of some commodities, was subject to "change without notice." Who can say that it would not have been better to definitely begin and complete three institutions for 1,000 each rather than have years of "confusion worse confounded" in having all the different parts thrown out of proper relation in a hospital of 3,000 capacity?

And as illustrating the working of this mischievous principle, I may cite the experience obtained at Kankakee. At the outset the largest number contemplated in this institution was 800,

but three or four years after the institution was started, the legislature, without consulting anyone, appropriated the sum of \$400,000, and gave instructions that 1,000 additional patients should be provided for. In this way an institution originally planned for 800 had double the number thrust upon it, and it goes without saying that the service buildings, kitchens, laundry, heating apparatus, etc., for 800 all proved entirely inadequate for 1,600. A process of remodeling was then painfully gone through with after conditions became unendurable. The sum of \$149,771.27 was expended in this way, most of which could have been saved by fixing the capacity at 1,600 in the first place. This expenditure added upwards of \$90.00 per capita for each patient.

Another illustrative experience of unnecessary loss grew out of the unfortunate fire which occurred at Kankakee in 1885. The inadequate amount of \$400 per patient appropriated for the buildings necessitated a cheap order of construction. It was impossible, within the amount granted, to have fireproof walls, or to heat with steam. Hot air furnaces had to be adopted. The consequence was that in one building containing 50 patients exposed woodwork caught fire, the building was destroyed and there was a loss of 17 lives. There was a lack of means for fire protection and, later, when the fire was inquired into, investigation showed that the legislature had cut down the sum asked for fire protection from \$2,500 to \$1,500. This latter amount was used, as far as it would go, to put in water mains, and bring the water to the buildings, but hydrants and hose could not be purchased; hence when the fire came there was no means to combat it. The \$1,000 which was cut from the appropriation asked for would have provided the hydrants and hose, and the building would in all probability have been saved. It may be said that an expenditure of between \$30,000 and \$40,000 was necessitated by the withholding of this \$1,000 for fire protection.

In conclusion, I wish to inquire whether a method could not be adopted of controlling the establishment of new state institutions whereby the necessary preliminary investigations and the settlement of the important questions which have so vital a bearing upon the right growth and development of such an organization, can be determined beyond peradventure. Thus, it seems to

me, the evils might be obviated which I have sought to portray in the foregoing pages.

Could not the board of administration be charged with the duty of investigating the questions of location, ultimate capacity, water supply, sewage disposal, quality and quantity of land, hygienic conditions, etc., in an authoritative manner, securing expert opinion where needed, and filing its reports and recommendations in the archives of the state for future reference?

Thus a central responsibility and control would be established, which would serve as a safeguard and efficient protection against the loss, waste and confusion which have so often been encountered.

INTERSTITIAL GINGIVITIS AND PYORRHEA ALVEOLARIS.*

EUGENE S. TALBOT, M. D.
CHICAGO, ILLINOIS.

For many years physicians have known more or less about the teeth becoming loose and dropping out. As a profession, however, they have taken little notice of the disease of the gums and the alveolar process, in relation to their patients, until the last two or three years. The work of Billings, Rosenow, Davis and others has brought the subject home to us all. The relation of pyorrhea to diseased organs and tissues of the body is a live one at the present time to both physicians and dentists.

The statements of those able men, Drs. Bass and Johns of New Orleans that, "The specific cause of pyorrhea dentalis and alveolaris is *endameba*" and that "emetine is a specific for this disease" prompts me to present this paper this evening. We are liable to be misled by such statements, and I wish tonight to study with you the etiology, pathology and treatment of the diseases of the gums and the alveolar process. This disease is an old one. I have examined skulls in the museums at Constantinople, of soldiers who fought in battles three hundred twenty-eight years, B. C.; the skulls of ancient Greeks and Romans at Athens, of ancient Romans, Etruscans and Phœnicians in Italy, the lake dwellers of Switzerland, and the bog dwellers of Ireland, and all showed evidences of this disease, some of them to the most marked ex-

tent. Fauchard, in 1740, wrote upon the disease but advanced no theory as to its origin. Later French and German dentists mentioned the disease, some believing it due to scurvy, others to mercurial poisoning, while others claimed that it was inherited and still others that it was due to systemic disorders.

Not until 1875 was any attention paid to the disease, when Dr. John T. Riggs of Hartford, Conn., read a paper before the American Academy of Dental Surgery on, "Suppurative Inflammation of the Gums and Absorption of the Gums and Alveolar Process." He invented instruments and gave clinics at that meeting on the treatment of the disease.

It may be safely stated, therefore, that this was the real beginning of the treatment of this disease. Such an impression was made by Dr. Riggs upon the dental profession at this time by his skill in treatment that it was named after him and still (in many localities in this country and Europe) bears his name.

In 1877 Dr. Rehwinkle of Ohio in a paper upon this disease called it "Pyorrhea Alveolaris." It will be noted that both of these gentlemen recognized the disease only at the pus stage. This, then, is the origin of the two names, "Riggs' Disease" and "Pyorrhea Alveolaris," which have come down to us at the present time. Although a number of papers had been written upon this subject, very little research work had been done until 1880, when I began my work. This was performed upon the jaws and teeth of humans, horses, cows, dogs, cats, monkeys, guinea-pigs and rats. From time to time the results of this work was published in medical and dental journals. In 1899 this work was collected and published in book form.

Transitory Structures.—Before taking up the etiology of interstitial gingivitis and pyorrhea alveolaris, a description of the structures under discussion must be described. The disease is wholly unlike other diseases of the body because of their peculiarity. The alveolar process is a transitory structure. The evolution of the face, jaws and teeth, due to environment and change of food causes the jaws to recede, as large jaws and teeth are not required for mastication. The alveolar process, which was once short and thick, has become long and thin. The blood supply of the jaws and alveolar process is diminished. The

*Read before the Chicago Medical Society, June 2, 1915.

bone which covers the roots of the teeth originally was quite heavy and well nourished. At the present time it is often as thin as a sheet of paper, and in some cases there is little or no bone on the outer surface of the roots of the teeth. This, however, is not all. At birth there is no alveolar process; when the first set comes into place, the process builds itself about the roots to hold them in position; when they are shed the bone absorbs away. As the second teeth erupt, the bone is redeposited to a greater extent because the roots are longer and more work is required of them. When these teeth are removed, the process rapidly absorbs away. The bone, therefore, is expressly intended to hold the teeth as long as they remain in the jaw. The alveolar process may therefore be called "Transitory Structures."

The alveolar process is an end organ. The arteries and nerves that supply the process are small and tortuous, and extend as far as the roof of the tooth. The teeth so far as the disease is concerned, is a foreign body. The nerves and arteries do not enter the tooth substance. Poisons circulating in the blood set up irritation and inflammation of the bone.

In some of the lower vertebrates there is a continuous succession of teeth, while in the higher vertebrates there are only two sets of teeth; while the two sets are intended to last throughout their lives, yet here is an atavistic tendency to absorption of the alveolar process. Should man live long enough in a fairly healthy condition, on account of this atavistic tendency, he would lose his second set of teeth. After the process has obtained its growth it becomes senile, so to speak, having performed its function, the art of mastication having in a sense been lost; a low form of inflammation results, with absorption. I have called this inflammation "Interstitial Gingivitis." All animals, including man, who possess two sets of teeth have this disease.

Interstitial Gingivitis.—The study of the disease of the gums and alveolar process must be considered under two heads, "The Inflammatory Stage and the Pyorrhea Stage." No one up to the present time has been able to demonstrate that the "inflammatory stage" is due to infection, although many, including myself, have tried all the present known methods to produce the disease. My own researches have shown that the

inflammatory process is due to irritation. This irritation may be divided into local and constitutional. The local causes are principally due to the deposits of tartar and poor dentistry, although any local irritation will set up inflammation. Place a rubber ring around the neck of a tooth against the gum in the healthiest mouth and inflammation of the gums and the alveolar process to the end of the root will result with absorption of bone. The constitutional causes are due to poisons circulating in the blood.

A low vitality of the general system due to any cause and want of resistance in the tissues themselves must always be considered. Drug poisons and auto-intoxication due to a want of proper elimination are the most active constitutional causes.

Treat a patient with mercury for a specific disease until when? Until the gums become sore and inflamed, and then stop. Why watch the gums and not other structures of the body? Because the alveolar process is a transitory process and an end organ. The process, therefore, is one of the first, if not the first, structure of the body to respond to the constitutional irritation. This irritation may begin at any point in the alveolar process from the apical-end to the gum margin, hence the term "Interstitial Gingivitis," deep-seated inflammation.

My researches on the subject of "Degeneracy" brought me in contact with thousands of children in public institutions both in this country and Europe. These observations, together with those of my patients, have demonstrated that nearly all persons have the inflammatory disease.

Pyorrhea Alveolaris.—Pus infection is always a secondary condition and is never the cause of the "inflammatory stage." Only about 10 to 15 per cent. of adults have pyorrhea. It will be seen, therefore, that so far as we know at the present time that the endameba, which is usually found in the "pus stage" has nothing to do with the inflammatory stage. From my own researches, the only relation of pyorrhea to the disease is the medium through which the absorbed alveolar process is carried and deposited upon the roots of the teeth, and is called by dentists "sernumal deposits."

The Effects of Irritation.—The effects of irritation upon the alveolar process, whether local

or constitutional, produce absorption of the bone. This absorption will take place at the point where the irritation is located. It may begin at the gum margin, at the apical end or midway between the two. The most common locality, however, is at the gum margin. Three forms of bone absorption result: (a) lacunar absorption, (b) perforating canal absorption, (c) halisteresis. While lacunar absorption is the most common, in more stable bones of the body, owing to the fact that the alveolar process is a transitory structure and an end organ, halisteresis and perforating canal absorption are the most common in the disappearance of the alveolar process. This is due to the transitory nature of the structure and the violence of the irritation. Lacunar absorption, however, is frequently observed.

Treatment.—From what has been said it is plain that the treatment of the pus infection containing the endamebæ is beginning at the wrong end. In other words destroying the endamebæ with emetine does not cure the inflammation, since the germ is not the cause.

It has been estimated that there are at least 150 varieties of germs in the mouth. Why select one of the least harmful, according to Chiavaro, and give it all the credit for pyorrhea, and leave some of the mast pathogenic as not worthy of consideration? If we use emetine and destroy the endamebæ, what becomes of the other 149 germs? What shall we do with the streptococcus group, the staphylococcus group, and the pneumococcus, as well as other pathogenic bacteria in the mouth? Why spend time examining the contents of the pockets to see if the ameba is present, in order to use the emetin, when with a "Krupp siege-gun prescription of iodine" the entire 150 varieties of bacteria may be annihilated at one explosion, if it comes in contact with them?

The first thing to do in the treatment of the mouth is to place it in a presentable condition, by the application of iodine about the gums, teeth and mucous membrane. No operator is justified in placing his hand in or spending much time examining a dirty mouth. Give the patient a "gum wash" and a "gum massage brush" and request him to use both vigorously upon the gums. The "gum massage brush" should be made of unbleached bristles to obtain stiffness. Remove all irritants, both local and constitu-

tional. See that the patient is in general good health. Place the eliminating organs in a normal condition. Bleeding of the gums is an indication of the disease "Interstitial Gingivitis." Deplete the gums and alveolar process of stagnant blood. This may be accomplished by scarifying the gums, and depleting the tissues. Remove all deposits on the roots of the teeth. The vacuum treatment may be used to deplete the tissues and stimulate them to a healthy action. The vigorous use of the "gum massage brush," a stimulating and astringent gum wash, should be used twice a day even after the gums cease bleeding. The iodine treatment should be used every other day until the gums and process are healed. Owing to the transitory nature of the alveolar process and the tendency to absorption, the inflammation and absorption is never cured in the sense that other diseases of the body are cured. Although the best of care may be taken of the gums and alveolar process, there will still be a progressive absorption, although slight in its nature. Eternal vigilance with gum massage and gum wash will be necessary throughout life.

Talbot's Gum Wash.

Zinc Sulphocarbolate	gr. 60
Alcohol	oz. 1
Distilled water	oz. 2
True Oil of Wintergreen.....	gtts. 8

Talbot's Iodoglycerole.

Zinc iodid	15 parts or grams
Water	10 parts or grams
Iodin crystals.....	25 parts or grams
Glycerin	50 parts or grams

CANCER.*

EDWARD C. FRANING, M. D.
GALESBURG, ILL.

It appears from statistics that cancer is on the increase at a rate of about one per every 1,000 in 10 years. This is not an apparent increase from improved methods of diagnosis, but in the opinion of all cancer authority, is real. I. S. Wile has found that cancer has increased from 3.61 to 7.35 per 10,000 since 1880. Massachusetts shows an increase from 5.21 to 8.80 during the same period. In the mortality statistics,

*Read before the Warren County Medical Society, June 4, 1915.

covering 55 per cent. of the whole population of the United States during the period of 1900 to 1910, cancer made a gain of 121 deaths per 100,000. The proportion of deaths in males to females is 38 to 62. The age in which most deaths occur is between 55 and 65. Sarcoma is not a disease altogether limited to younger life, neither is carcinoma limited to adult or old age. Giacomini reports a case of sarcoma of the stomach in a man of 91, while the Ann Arbor clinic reports 1 to 5 cases of carcinoma in every year of age from 4 to 12 years. Smithies has 16 cases of carcinoma of the stomach under 30 years of age, one of them being in a patient 18 years of age.

Nothing definite has been developed in the etiology of carcinoma. Conheim's "Displaced Cell Theory" seems to be losing ground. Much has been advanced on the theory of irritation. The fact that carcinoma occurs most frequently at the site or points of most irritation would be much in its favor. For instance, smokers' carcinoma of the lip, carcinoma of the skin, of the stomach, especially of the hepatic or splenic flexure of the cecum and of the appendix, of the sigmoid and rectum, of the cervix uteri, and of the breasts; all of them being points of most irritation. Also carcinoma develops in old scars. Many cases of carcinoma have been reported developing in scar tissue, especially where the irritation has seemed to have lasted a long time and been constant.

When normal tissue is subjected to irritation, either traumatic or chemical, it has a tendency to heal. If the irritation is removed, the wound is healed with normal cells. If the trauma continues for a longer or shorter time, the cells in attempting to heal become erratic in their growth and an abnormal growth is formed which may become malignant. The ability that normal tissue has to stand traumatism, varies a great deal. We are led to believe that in many instances sarcoma, and in some instances carcinoma, has followed a single traumatism. In other cases traumatism of a very short duration will start a very malignant condition, while other times the tissue may be subjected to traumatism for a long period of time, even through a life time, and not become malignant.

Fifteen to twenty-five years ago when bacteria

found in the simple forms of diseases were first considered a cause, and later on, were found to be the cause of the granulomata, such as tuberculosis and syphilis, they were thought to be the cause of tumor formation, but were never directly connected up, and the theory lost confidence until the last few years, when a great deal of work has been done along that line. The parasitic theory of carcinoma has been so thoroughly found positive that most of our great investigators who considered it absolutely negative previously, are beginning to put a very great deal of thought on the subject. Thus we find Verne of the Marchand's Institute in Leipsic considered tumor due to some biochemical agent that acts from without the cell. We also find Ehrlich working along that line. The last few years, Rous and Murphy at the Rockefeller Institute have been doing some interesting work. They have been able to transmit chicken sarcoma, three types from one chicken to another, almost indefinitely. That may not seem wonderful in light of the fact that skin, muscle, nerve, fasciae, and, in fact, nearly all tissues have been transplanted from man to man or animal to animal, and why not sarcoma? But they have gone further. They ground up the sarcoma tissue with distilled water in sand and forced it through a Berkefeld No. 5 filter which stops bacilli liquifaciens 5 microns in diameter, and, with the filtrate, produced the same species of sarcoma in healthy chickens. There is one thing in these experiences we can be sure of, and that is the sarcoma produced by the filtrate was not produced by intact sarcoma cells. They also desiccated the sarcoma tissue under sulphuric acid and air suction and made a solution of the desiccated tissue in distilled water, and filtered through a Berkefeld No. 5 filter, and produced sarcoma in a healthy chicken with the filtrate. They also produced sarcoma in healthy chickens, by a glycerine solution of chicken sarcoma. At least in chicken sarcoma, it is not necessary to transmit sarcoma cells. That is, sarcoma in chickens may be transmitted without sarcoma cells. And, if it is transmitted without cells it must be transmitted by some other body, whether organized, or unorganized, remains to be discovered.

It can be shown in these experiments and by others, that the percentages of success in the

transmission of tumors from one animal to another can be increased by first injuring the tissue. In the transmission of mouse carcinoma from one animal to another, by first injuring the peritoneum, or the point of inoculation, successful transplantation can be gained, where, if the tissue had not been injured a great many times, it would not be successful. Mouse carcinoma can be transplanted from the mouse to the rat, but only in a very small percentage of cases, unless the tissue of the rat has been injured. Mouse carcinoma can be transplanted from the mouse to the chicken, but only by being inoculated into the egg. Even should it be found that the cause of carcinoma or sarcoma is a germ, it is plain that injury either traumatic or chemical can play a great part in many cases. Carcinoma of the stomach is much more frequent in rats that have been fed on cockroaches than in rats that have not been, which would suggest that probably the nematodes might act as an irritative to the stomach and possibly also help in the infection. So it is evident that carcinoma is augmented by an acquired susceptibility. That it is augmented also by a natural susceptibility is shown by the fact that carcinoma in mice and rats both is very much more frequent in those that have a short ancestral carcinoma history, and is less frequent in those that have no carcinoma, or a far carcinoma history.

The success in the treatment of cancer and tuberculosis is in inverse proportion to the time that has elapsed from the time they begin, until treatment has been instigated. Wainwright, head of the Pennsylvania Cancer Commission, found in a series of 200 cases of superficial cancer including the mammary gland that 16 to 18 months elapsed from the time the patient first noticed the symptoms of cancer until they presented themselves to a doctor for treatment. He also noticed in the same series that from 12 to 14 months elapsed from the time the patients presented themselves to a doctor until they went on the operating table. If such is the case in superficial cancer where the diagnosis should be made comparatively easily, much more time must elapse under the same conditions where the cancer is deep. Lillianthal found that in a series of 86 cases of cancer in his own private work, that it was a little over 11 months from the time that the patient noticed the first symp-

toms of the tumor until they consulted a doctor. Such would be the average experience of all the cases. Why is it we do not put those patients under proper conditions earlier? The ordinary general practitioner or family doctor is consulted by his patients for all classes of conditions, from coughs due to an ordinary cold that will clear up in a few days or a few weeks' time, to more serious conditions. The same is true of stomach troubles. If a patient comes in with a cough, or complains of his stomach, we usually are inclined to give them something for it. Sometimes with due examination and a great many times just from consultation the patient leaves the office either to get better, or to return shortly with the same symptoms. We make a little more thorough examination, and we will give him some medicine. Maybe this time he will get better and not return, or will go some place else. The rule is, they get better and do not return. There are cases of skin trouble, gland or breast trouble, chest, abdomen, uterus, or rectal trouble, that do not get better in a short time, or fluctuate from better to worse and back. This is the class of cases that the doctor should not treat long without making a definite diagnosis. If he has not the means with which to make a diagnosis he should put the patient under condition where every effort and every means can be used to make a definite diagnosis. That is, practically speaking, the family doctor in his routine work gets all the acute cases that get well under treatment, and the chronics that may get well, or may, or may not get some better for a while, only to get worse later on. Among this latter class of cases the family doctor or practitioner should devote his special attention and time. Patients should be thoroughly cleared up from their troubles and watched, or the physician should know why they do not clear up. He should use every method he has in hand to diagnose the condition and treat it accordingly. If he is unable to do so he should not waste time in fooling with remedies and trusting to luck to clear up the case, and waste the time the patient should have under the proper care. This is not a criticism of the general practitioner but a criticism of the conditions in the past, but we may be sure with the pathology and the tentative etiology of cancer known, this class of cases will go to the surgeon much earlier. The responsi-

bility of the lives of cancer, or will be, cancer patients, depends on an early diagnosis, and he who takes these patients, assumes that responsibility. There is not as yet any specific in the diagnosis of cancer in any part of the body. The biologic, the immunity reaction, and the Abderhalden reaction are as yet only of scientific interest; but they show enough positive reactions that the whole subject of specifics in the diagnosis of cancer in a practical way is becoming encouraging. In the treatment of cancer, the earliest diagnosis possible is necessary, and anything in the way of a specific or even that will help in the diagnosis will be very welcome. Therefore, a complete and carefully taken, and carefully analyzed history, a careful analysis of the symptoms and also a thorough physical examination with a careful analysis of it, suffices to make a diagnosis in a large majority of cases as they come to the physician or surgeon at the present time. These are the two most important diagnostic methods which we have today. Unfortunately, even if this is done there remains a large number of cases that will go undiagnosed. The laboratory methods, in the way of stomach analysis, blood, urine and feces are not of as much good as they formerly promised. In a few cases they help greatly. But in the great majority of cases they are not of great importance. The x-ray is doing much toward helping us in diagnosing chest and abdominal cases. It is specific in only a few cases. But the positive findings in some cases of stomach and bowel work will serve to make a diagnosis. In a large majority of cases it will help a great deal. But the most good comes from a negative finding in both screen and plate work. Another method of probably more importance than either of the former two is the clinical observation. Many times, case histories, examinations, laboratory methods and x-ray give us negative results, but if we will put that patient under careful observation, using such methods and treatments, and putting them under such conditions as will help us, it will sometimes serve to make a diagnosis. After all these methods have been gone through most completely, there are a few cases which we are still unable to diagnose. It is probably our duty to make provisional diagnosis in those cases, and, at least, put them in the medicinal, or surgical class. If we are unable to make a diagnosis of

internal conditions it should be put in the surgical class and exploratory work ought to be done. In this period of surgery when there is practically no danger in going into the abdomen or doing exploratory work in any part of the body, we should not hesitate, in fact, it should be obligatory on our part, to give the patient the benefit of this method, and do it as early as consistent with good diagnostic work.

In the treatment of the cancer question, the profession must remember the two things that are characteristic in the treatment of any condition, prophylaxis, and treatment of the actual condition which to this time is purely surgery assisted by other means, x-ray, heat, and chemicals, etc. In handling the condition of prophylaxis of cancer, the one point the profession must get firmly fixed in their minds is that cancer is to a certain extent a preventable disease and always at some stage a curable one, and following that, those same ideas must be imparted to the public. The people must be disillusioned that carcinoma and death are synonymous. They must be inspired with the fact that cancer is not necessarily fatal and that in a certain number of cases it is preventable. They must be taught that ulcers, bruises, injuries, scars, etc., practically never give any trouble after they are healed, but that once in a while they do cause malignancy and that if any abnormal condition develops, it should warrant the consultation of a physician. In other words, the profession must start a campaign to educate the public on the subject of cancer. The education of the people in regard to tuberculosis has brought amazing results, which is very small compared with which it will bring. In some small sections, where popular education, in a small way, in regard to cancer has been tried, the percentage of operable cases has been raised nearly a hundred per cent. In every state there should be a State Cancer Commission appointed by the State Medical Society, operating in harmony with the Cancer Commission of the American Medical Association. In every County Medical Society, or unit of the State Society, there should be a County Cancer Commission appointed, which should operate in harmony with the State Cancer Commission. It should be through these units, using the newspapers, magazines, churches, clubs, etc., to educate the people. As to the treatment of

a malignancy, after it exists, thus far we have nothing to take the place of surgery, and it is self-evident from the pathology of malignancies, the earlier surgery is done, the better. Malignancies are focal points at some stage and they should be removed. No time should be lost in trying any of the occasional cures. X-ray, radium, and their allies have been used with varying success, but the results are so compromising at this time that they should not be used in an operable case of malignancy. We all have seen striking results in their use in treatment of superficial carcinoma and believe that when we have instruments that will radiate deep malignancies as thoroughly as we can superficial, the results will be just as striking. When we see the authorities both of America and Europe advising their use as an auxiliary to surgery, they must be considered to have some merits and these, no doubt, will be improved.

CONCLUSIONS.

1. Cancer is on the increase not by actual statistics, but in the opinion of most of our cancer authorities. Yet there is room for doubt.
2. Nothing definite has yet been found in the etiology of cancer, but from the immense amount of work that is being done along that line we will hope for something more definite in the near future.
3. Cancer is curable, but just in inverse proportion to the lapse of time that has existed before surgical intervention.
4. The treatment is purely surgical, in some cases preceded, but always followed, by x-ray.
5. The doctor to whom the patient first comes should make every effort to make a diagnosis as early as he possibly can, and as soon as the diagnosis is made should advise immediate operation unless it is an inoperable case. If it is an inoperable case, x-ray in the largest doses or radium should be used.
6. The people must be taught that cancer is preventable in many cases by looking after old scars, lacerations, ulcers and points of irritation, and that cancer is curable in the earliest stages.
7. The enlightenment of the people must be done by the profession, through magazines, papers, churches, clubs, etc.

ACUTE FRONTAL SINUSITIS.*

R. H. Good, M. D.,
CHICAGO.

The purpose of this paper is to aid the general practitioner in making an early diagnosis in acute frontal sinusitis, and to outline a treatment which will cure the great majority of cases without surgery.

Etiology. Any condition or disease which closes the frontal duct will cause a sinusitis of the frontal sinus. Acute rhinitis, influenza and the acute infectious diseases are the most frequent causes of closure of the duct.

Inflammation of the anterior ethmoid cells, enlargement of middle turbinate from hypertrophy of the mucous membrane or osseous cyst of the middle turbinate, deflection of the septum pressing the middle turbinate against the infundibulum, are predisposing factors in closure of the fronto-nasal duct. Fractures and penetrating objects into the sinus may cause frontal sinusitis.

Intra-nasal operations in the region of the middle meatus and especially electrical cauterization are liable to cause frontal sinusitis. Nasal polypi may close the duct, but my experience leads me to think that the polypi are more often caused by a chronic discharge from a sinus than that of the polyps causing a sinusitis.

Primary frontal sinusitis, originating in the sinus is rare, but may be caused by syphilis, tuberculosis, granulations, polypi, tumors or ulcers.

Pathology. The mucous membrane at first has a dry surface, but is very much swollen. The blood vessels are dilated and the tissues are infiltrated with serum, and the leucocytes are scattered all through the tissue. Later the serum and leucocytes escape through the membrane, at times tinged with blood, which becomes mucopurulent if the sinus cannot empty itself fast enough. When this secretion is retained in the sinus for some time without drainage it becomes a very thick, creamy pus, which is almost opaque to transillumination.

The areas where the frontal sinus is most liable to yield to the pressure of the pus are the inferior wall of the sinus at its inner aspect, which causes edema of the upper lid. The next in order of frequency is in the upper inner aspect of the anterior wall of the frontal sinus about half an inch above the inner end of the eyebrow.

*Read before the Aux Plaines Medical Society.

The pus may break through the septum into the opposite sinus, which I have observed in a number of cases. Fortunately the posterior bony wall being convex does not yield as readily as the anterior wall, which explains why extra-dural abscesses are not so frequently met with as one would expect.

Symptoms. The majority of patients suffering from a cold in the head accompanied with severe headache or neuralgia are suffering from an acute catarrhal inflammation in one or more of the sinuses of the nose with retention of secretions.

Pain. The pain or dull ache is most severe in the region of the sinus, but may be referred to the center of the forehead. It radiates to the temporal region and may extend to the occipital and mastoid region.

Coughing or blowing the nose increases the pain. Stooping forward or bending over to pick up something from the floor causes the pain to be increased, and almost invariably makes the patient more or less dizzy, a symptom of great importance in making a diagnosis. Percussion over sinus produces pain.

Firm pressure over the sinus always elicits severe pain in acute cases, but not always in chronic sinusitis. It is my custom to place both hands over the patient's head with the thumbs over the frontal sinuses. In this way I can use great force and make deep pressure. I make pressure alternately over the normal sinus and then the diseased sinus.

The pain and headaches are most marked in the morning and gradually subside toward noon. This is due to the fact that as soon as the patient gets in the erect position, the pus gravitates over the orifice of the frontal duct and prevents ventilation of the sinus. When enough pus has been discharged to relieve the pressure the pain subsides.

Swelling and Redness. In severe cases where the pus penetrates the bone and irritates the periosteum, we have swelling and redness in the region where the pus has penetrated. This causes a drooping of the upper lid, which occurs in all cases where there is swelling of the tissues over the sinus. In case of pus filling the supra-orbital region, the eye is protuded from the orbit and pushed downward and outward. The ab-

cess is most prominent just above the inner canthus of the eye.

Discharge. In acute catarrhal frontal sinusitis we have only a mucous discharge, which, however, becomes purulent if retained in the sinus.

There are some cases with no discharge at all from the nose, but in these cases sooner or later a swelling appears, indicating that the pus is draining somewhere else through the bony wall of the sinus.

The nasal discharge at first is yellow and comes from the nostril on the side of the diseased sinus. This discharge may be blown out of the nose or it may drop back into the nasopharynx and be expectorated. The pus has the odor of mice. The quantity is greatest in the forenoon on account of the accumulation during the night, due to the recumbent position. The patient may expectorate a dram or more of secretions every hour in the morning.

The discharge on looking into the nose can be seen coming from the middle meatus. A discharge coming from the middle meatus comes from one or more of three sinuses, namely, the antrum, frontal sinus, or anterior ethmoid cells.

By aspirating the antrum and washing it out we can exclude this sinus, for if no pus is found it must come either from the frontal sinus or anterior ethmoid cells. By passing a cannula into the frontal sinus (which can be done in about 50 per cent. of the cases), we can determine pus in the frontal sinus. In case no pus is found we know it comes from the anterior ethmoid cells. The temperature may run from 99 to 100. The pulse may be accelerated.

A patient having a discharging sinus will have a pharyngeal irritation and cough as long as the discharge continues.

Eye Symptoms. Drooping of the upper lid is very common. It is due to swelling of tissues above. It is rarely caused by paralysis of the third nerve. The conjunctiva is congested in the eye on the same side as the diseased sinus. If the third nerve is paralyzed, due to pressure, it causes a dilated pupil and double vision. The patient reads with much discomfort. Optic atrophy, papillitis and iritis may result from this disease.

X-Ray. The x-ray is a valuable help in determining the size of the sinuses, but not as valuable in acute sinusitis as in chronic sinusitis in determining the pathology.

Transillumination. Transillumination is of much more value to detect mucopus and congested membranes in acute sinusitis than the x-ray, as its rays are not so penetrating and therefore mucus and congestion in the sinus show a shadow, which with the x-ray would not be detected on the plate.

In chronic cases where we have tumors, hypertrophied membranes or thick pus, the x-ray is perhaps more valuable. In addition to the above symptoms, we have obstruction to nasal respiration, more or less impairment of the sense of smell and a lack of concentration of mind. The intra-cranial complications are extradural abscess, meningitis, brain abscess and cavernous sinus thrombosis.

Treatment. 1. Preventive.

Where the patient has obstruction to nasal respiration, which makes him subject to frequent colds, the nose should be put in a condition so that nasal respiration is established. When the nose is obstructed from congestion caused by the acute infectious diseases, or acute coryza, the physician can do much to avoid sinus and ear complications, by opening the nostrils twice or three times a day. This can be accomplished by dropping adrenalin inhalent into the anterior nares two or three times a day, or the adrenalin ointment in collapsible tubes may be used instead, by squeezing a little of the ointment into the anterior nares twice or three times a day.

In cases where this treatment fails to open the nose, you may employ a half per cent solution of cocaine in adrenalin chloride 1 to 10,000, dropped or sprayed into the anterior nares with the patient in a recumbent position. This treatment permits ventilation to the sinuses and ears several times a day, and thereby often prevents acute sinusitis and acute otitis media.

The employment of douches when the nose is acutely inflamed does much more harm than good.

2. Curative. The treatment for acute frontal sinusitis consists in establishing drainage. As soon as the diagnosis is made the nose should be sprayed or swabbed in the region of the middle turbinate with a one-half per cent. solution of cocaine in adrenalin chloride 1-5000 twice a day. The spray or swab should be used several times, with a minute's time between,

as the shrinking will allow each successive spray to go higher up into the nose.

For an hour after the application, the patient should occasionally blow the nose vigorously by keeping the nares practically closed with the fingers, which tends to push air up into the sinus. Immediately after blowing the nose, the patient should shut the nose and suck by negative respiration. The blowing increases the pressure in the sinus above the pus and then sucking makes traction below, and the plus air pressure above aids very materially in emptying the sinus.

Special suction devices may be used, which are still more valuable than suction by the diaphragm.

Menthol and camphor grs. ii each in an ounce of albolene are of some value to keep the nose open, when sprayed into the nose after the application of the cocaine and adrenalin.

Aspirin is of considerable value not only in relieving the pain and eliminating, but it seems to have some tendency to improve respiration through the nose. I employ urotropine in these cases and believe it does some good, but it is impossible to prove just how much benefit it does.

The patient should frequently change position. Hot applications over the sinus with an electric pad ease pain and promote drainage.

If in three or four days the symptoms are not relieved, or very much improved we should employ surgical means to establish draining. Removal of the anterior end of the middle turbinate and opening the anterior ethmoidal cells may be all that is necessary to establish drainage, as by so doing we can usually pass a cannula into the frontal sinus and irrigate the same, which will immediately relieve the pain. If a cannula cannot be passed up into the sinus after this is done, it shows that the frontal duct is very small, and should be enlarged intranasally.

In a case where we have swelling and redness over the sinus we know that the bone has been penetrated by the pus and in these cases an intranasal operation for enlarging the duct should be done at once, as one takes a great risk in attempting to cure one of these cases by medication. Too long delay may result in chronic empyema of the frontal sinus, which is infinitely more difficult to cure than acute sinusitis.

The author devised a method for enlarging the frontal duct by means of rasps, eight years ago, which has proved very satisfactory. Out of 48 sinuses operated on by this method only two required external operation, and these not for lack of drainage, but for extradural abscesses. The operation consists of removal of the anterior end of the middle turbinate, biting out the anterior ethmoidal cells up to the base of the skull, then inserting the writer's frontal sinus rasp, and rasping out ethmoidal cells up into the floor of the frontal sinus.

I have failed once in 48 cases in getting the rasp up into the sinus.

An external disfiguring operation for acute frontal sinusitis should only be done in cases with intracranial complications and in cases where the intranasal operation has failed to get up into the sinus, or failed to cure.

The danger from meningitis in skilled hands is no greater with the intranasal method than it is with the external method.

25 East Washington street.

PYELONEPHRITIS.

FRENCH S. CARY, M. D.,

Asst. Professor of Urology and Urological Surgery, College of Medicine, University of Illinois.

CHICAGO.

The subject of pyelonephritis is one which has only become prominent and named as a distinct clinical entity in the past 12 or 15 years. Previous to 1905, we find practically nothing on it in the English literature and but few reports in the French and German. The term pyelonephritis is given to a condition of the kidney in which the parenchyma is invaded by virulent micro-organisms, most frequently the colon bacillus or pyogenic cocci, usually producing within the kidney, numerous miliary abscesses, which may or may not coalesce, may produce any lesion varying from slight cloudy swelling to complete necrosis, and often accompanied by a toxemia so violent that without the removal or draining of the affected organ, death usually ensues.

This form of infection was classed by older writers with the other forms of acute suppurative renal infections, under the term surgical kidney. No attempt was made to treat it as a distinct surgical entity until the possibility of a unilateral hematogenous infection was proven by Brewer and Cobb in a series of animal experi-

ments. Some of the acknowledged authorities on renal disease, among them Guyon and Albaronfi are of the opinion that many of the kidney infections secondary to bladder troubles are also hematogenous in origin. It is said that normally the kidney excretes various micro-organisms without injury to its substance. It is not unusual to find the colon bacillus present, and in typhoid fever, the typhoid bacillus in the urine without any involvement of the kidney structure.

Condon states that he is convinced that we never have an infection in the kidney without some previous change in the renal circulation or a physiological or pathological disturbance in the kidney itself. He states that the most common predisposing cause of infection is a passive congestion of the kidney. These changes may be so slight that the patient's attention may never have been directed to the kidney, but are sufficient to cause a lowered resistance in the organ, and thus give rise to a suitable soil for infection. Owing to its anatomical relations the right kidney is more vulnerable to infection than the left. Pringle of London gives the relative frequency of involvement as 90 per cent. for the right kidney and 10 per cent. for the left.

The nodes of infection are as follows:

First. *Hematogenous.*

- a. The infection may lodge in the organ following subcutaneous injury to the kidney.
- b. Catarrh of the intestine or stagnation of fecal current.
- c. Septic emboli from acute infections.
- d. Metastases from the lower urinary passages or from the opposite affected kidney or from an infected uterus or tube.
- e. Metastases from tooth infection, tonsils, furuncles or any form of peripheral suppuration.

Second. *Urogenous.*

- a. The infection may ascend to the kidney by direct continuity of the musoca, especially following cystitis of the chronic type associated with hypertrophy of the prostate, which is so frequently found in men past fifty years of age.
- b. Unclean ureteral catheterization.
- c. Ureteral fistulae.
- d. Pressure from tumors.
- e. Torsion of the ureters in floating kidney.
- f. Paralysis from spinal cord injury or disease.

g. Stricture of the ureter or urethra congenital or acquired, the urine being dammed back with the resultant distention and infection.

Third. *Lymphogenous.*

a. The infection may gain access to the kidney through the lymphatics from the bladder and ureter and from the lymphatics of the colon.

The diagnosis of a typical case of pyelonephritis is comparatively easy, but atypical cases at times present some difficulty due both to the obscurity of certain symptoms and to their frequent absence. Kent of London cites a case of a school boy who attended school until the eighth day of the disease. He was brought home with a temperature of 105°. He had mastoid tenderness with no other symptoms except the pyrexia and rigors. A history elicited some frequency of micturition. A urinalysis showed the bacillus coli and a few pus cells in an alkaline urine. A second analysis showed these same findings plus the staphylococcus albus. The pulse ran from 112 to 168, and the prostration became extreme, and rapid emaciation followed. This case is cited to show how easily one may be led away from the true cause of the evil, especially in the early days of the disease if he is not always on the alert.

Keys of New York says that the only way not to overlook pyelonephritis is to "suspect as pyelonephritis every case of bacteriuria or pyuria that is not urethritis."

In making a diagnosis naturally all the newer methods should be used. A thorough physical examination should be made after a careful elicitation of the history. The x-ray, cystoscope, ureteral catheterization with renal functional tests should be employed, and it is in these cases that the functional estimation of the kidney has proved of great value in the differentiation between pyelitis and pyelonephritis. In pyelitis the renal function is practically normal, while in pyelonephritis there is decrease in function depending upon the degree of destruction. In pyelonephritis pelvic lavage has produced little if any improvement, while suitable cases of pyelitis have responded promptly. Examination of separately collected samples of urine bacteriologically, chemically and microscopically with possible inoculation of the guinea pig is necessary.

Pyelonephritis may be either acute or chronic. The chronic type however is very infrequently

met with. The onset of acute pyelonephritis may be very abrupt or gradual. In the latter type of cases, the patient may be troubled with frequency of urination, voiding every 30 minutes to 1 hour, both day and night over a period of several days. Then pain may appear in the loin on the affected side, radiating to the groin with stiffness and lameness, and with an occasional feeling of chilliness. The symptoms now become rapidly severe as in the type of case in which the onset is markedly acute. Pain over the affected kidney may be continuous and is sometimes so intense and sudden that it may be mistaken for visceral perforation or fulminating appendicitis. There is always marked tenderness over the kidney, intensified by first percussion, with the point of greatest intensity at the costo-vertebral angle. This is considered by Brewer of New York as a pathognomonic sign. There may be hyperesthesia of the overlying skin and rigidity of the lumbar muscles. There is dizziness, intense headache, great prostration and a rapid emaciation, and if the patient is left untreated death usually occurs. There are also groups of cases in which the symptoms are present, but with lesser severity. These cases do not require the radical treatment. In the chronic type the symptoms may be quite obscure. There may be pain in the back when riding, tenderness around the waist, headache, digestive disturbances, dizziness, rigors and rheumatic attacks. The urine may be negative for periods and then show the characteristic findings, or no diagnosis may be made until an acute exacerbation is brought on. By means of the urinary findings in conjunction with other signs and symptoms do we usually cinch our diagnosis. The urine is alkaline and shows albumin, pus and microscopic blood and the causative bacteria. By means of the cystoscope and ureteral catheterization we are able to assure ourselves which is the offending kidney and to what extent. By these means we eliminate the bladder, urethra, prostate and seminal vesicles as the cause of the urinary findings, and fasten it on to the kidney. However, in the presence of systemic findings, we must not definitely rule out the kidney conditions by finding a negative urine, as there are cases in which there may be complete suppression of urinary function in the affected kidney. Abnormal retention and delayed excretion also speak for pyelonephritis in

that it may be bound up with pus in the kidney for a long time before the containing abscesses rupture and discharge the pus contained therein.

In regard to the treatment of pyelonephritis we must first take into consideration the type of case. Brewer classifies them in three types, the mild, the intermediary and the acute fulminant. He says, "that to adopt any other method of procedure than nephrectomy for the latter type is to invite death." This seems to be the general consensus of opinion of most authors. However, before proceeding with the radical step we should first assure ourselves by means of renal functional tests, using the cystoscope and ureteral catheterization, urea percentage and other laboratory diagnosis, that the opposite kidney is not involved. It must be borne in mind that congenital absence of one kidney is to be expected once in 2,650 cases, and horseshoe kidney once in 1,000 cases, not forgetting the infantile type of kidney which is far from rare. Some authors are not quite in accord with Brewer, claiming that nephrotomy is a more conservative and efficient course to pursue. But if conservation is thought of rather as a means of saving the patient's life rather than the kidney, the statistics are unassailable. Lower of Cleveland, in a study of all cases reported from 1899 to 1913 gives the following percentages. With nephrotomies, the deaths were 18.64 per cent., the complete recoveries 81.36 per cent., while with nephrectomies the deaths were only 14.38 per cent. and complete recoveries 85.62 per cent. Brewer in a series of 14 cases, all his own, gives the following: 8 nephrectomies and all recovered; 4 nephrotomies and all died, 2 untreated and both died. Baldwin in a study of 67 nephrectomies done by his father and himself states that if recovery is complete, the expectancy of life is the same as for a person with two good kidneys. However, nephrectomy carries with it a greater amount of shock and there is more danger from hemorrhage. The latter, however, can be brought to a minimum by proper technique. This treatment should be instituted as early as possible after making the diagnosis of a suppurative involvement. Delay even of a few hours may allow the nephrotoxic bodies to gain access to the circulation and start the destruction of the opposite kidney. The intermediary cases are those in which suppurative processes are not

present and may be treated by decapsulation, which will usually abort the symptoms and save the kidney.

The treatment of the mild cases can be summed up very briefly and consist of giving forced water, rest in bed and urotropin in moderate doses well dissolved in large quantities of water.

30 North Michigan avenue.

SUGAR TREATMENT OF OZENAL RHINITIS.

CHARLES B. YOUNGER, M. D.,

Associate in Laryngology, Northwestern University Medical School,
CHICAGO.

If there is one class of cases that especially taxes the patience and resources of the rhinologist and that yields the most generally unsatisfactory results it is, I believe, those grouped under the general classification of atrophic rhinitis. Those of the ozenal type are often extremely obstinate, and regardless of etiology, all finally resolve themselves into about as disgusting and forbidding a lot as the physician is called upon to treat or the public to tolerate. Persons thus afflicted are doubly unfortunate, for not only is every one with whom they come in contact conscious of their ailment, but their own olfactory sense is dulled or destroyed by the ravages of the disease and they remain in ignorance of the foul odors that emanate from their nostrils until perchance some one informs them. Social and business ostracism is the fate of many.

For nearly a year I have been making systematic use of cane sugar in the treatment of these cases, in both clinical and private practice, and the results thus far have been more than satisfactory. I have had a total of fifty-four cases under personal observation and in the majority of these have been able to compile records in detail.

The rationality of the treatment is based upon the fact that cane sugar prevents fermentation. The germs of decomposition and putrefaction cease their activities in a simple syrup medium or a strong solution of cane sugar. It seems likewise fatal to several varieties of pus germs, as evidenced by the disappearance of staphylococci, streptococci and others from the secretions during my experimentation. Ozenal rhinitis de-

rides its name from the putrid secretions and odoriferous crusts that constantly accumulate in the nose and which are dislodged with great difficulty only to make room for the formation of others. The germicidal action of the sugar is shown by the prompt, and in many cases, sudden disappearance of crusts and cessation of odor. With but few exceptions this was accomplished within two weeks from the institution of treatment. This is followed by a rapid disappearance of pathological secretions, closely observed in this series of cases by both macro- and microscopical study.

To summarize briefly, I would say that in all cases the crusting was done completely away with during treatment, and that there was without exception a decided improvement in both the local and general physical condition of the patient. The gain in general health in some cases was attributed largely to the cessation of daily nausea and vomiting that were present. The only disappointing feature was that in six cases there was not a complete disappearance of odor. This may yet be accomplished, however, as all are still under treatment.

I do not wish to be understood as claiming absolute cures in these cases. Ozenal or simple atrophic patients who have an underlying or accompanying sinus disease or who have syphilitic, tuberculous or other contributory systemic condition make it seem improbable to accomplish a cure by such simple means. I am satisfied, at least, that sugar is a very useful agent in that it will alleviate the most distressing symptoms.

The plan that I have followed has been to first cleanse the nose with a mild, warm alkaline solution, using either spray or douche. Then strips of gauze cut one inch wide and eight inches long are doubled, saturated with simple syrup and gently packed into the upper recesses of the affected nostril. I mention "upper" because indiscriminate packing will not suffice. The syrup must be brought in contact with all available mucous surface. These packs when placed carefully are not uncomfortable and may be left in place twelve hours and then removed by the patient. Repetition of this treatment on alternate days for two weeks has been the course followed. With cessation of odor and crusts the patients have been intrusted with self care. This has consisted first of cleansing the nose with a mild,

warm alkaline solution, followed by snuffing from the hand a generous quantity of pulverized sugar. This was done morning and evening. From the patient's standpoint this affords a simple and inexpensive means of relief and good co-operation has been had.

Various mixtures and solutions of cane sugar have been tried in office treatment, but simple syrup has proven most prompt and efficacious.

25 East Washington street.

A RETROSPECT.*

C. F. SMITH, M. D.,
KANKAKEE, ILL.

An individual who has practiced medicine and surgery for forty, twenty or even five years, and kept up with the procession, has learned many things as facts that time proved to be fallacies; and he has been compelled to shift his sails and change his tactics on more than one occasion, and the longer he has practiced the more numerous the changes.

The man who said that "There was nothing new under the sun" did not live at this day and age, or was blind, stupid or not progressive. For example, consider the new serums that we inject for the preservation of our health, from tuberculin to phylacogen, covering the whole category of disease from tuberculosis to whooping cough. It is an off month when no new serum is discovered, or some new rule of health is now promulgated, from the eating of a raw carrot every day to preserve our digestion, and the dancing of the "Tango" for the preservation of the symmetry and rhythm of our bodies, if not for the consolation and preservation of our souls. No, the man who said "There was nothing new under the sun" was "A Mutt right."

Some forty-odd years ago, in the Cincinnati Hospital, where the foundation was laid for a colossal structure in medicine and surgery (which never materialized), I was taught by the Solomons of surgery of that day and age, that to open the chest wall was manslaughter and to touch the peritoneum was murder in the first degree.

I soon had to unlearn that and was convinced, in the language of the street, "I had got a bum

*Read before the Kankakee County Medical Society, March 3, 1914.

steer," for we were soon resecting ribs, and learned that the peritoneum would stand more abuse than any other membrane of the body.

You all remember when we were taught to scrub, scrub, and scrub some more, all open wounds until the doctor and all the nurses were tired out, and then we closed them. However, at the present time we do much less scrubbing, use tincture of iodine, and infected wounds have decreased rather than increased.

Not so long ago we treated abscesses by free incision, curetting and packing, with general sepsis sometimes following. Someone discovered that leucocytes and phagocytes, if given a chance, would wall off and pen up pus in nearly every locality of the body, and to tear down the wall by curette or other means was not the best surgery, and the old rule of "waiting for boils to come to a head and abscesses to point" before an incision was made, was not such bad surgery after all.

I doubt if there is a surgeon today who would tear down the wall of an appendiceal abscess, if possible to avoid it; he would realize the danger of peritoneal infection and would be content with drainage, and drainage alone, regardless of the condition or position of the appendix.

I believe that most physicians would today hesitate to thoroughly curette an infected uterus, due to an abortion or whatever the cause, for in so doing he would tear down the wall, builded by our friends the leucocytes and phagocytes, open up new foci for infection and invite general infection; hence not the best treatment. Yet not so long ago it was taught and practiced.

Recently, and perhaps at the present time, there are surgeons who advocate and practice the open method in the treatment of all fractures. However, at the present time I believe it is not considered by most surgeons the best treatment. Not so very long ago, I remember the answer of a very eminent surgeon, when asked, "When should Lane plates and other similar devices be used in the treatment of fractures?" After giving many reasons why, the answer came—"Never, if you can hold them in any other way." Hence again learn and unlearn.

There are many other things from tonsilotomy, appendectomy and ovariectomy to "Lost Manhood" I might take up, but I am trespassing

on your time. I have observed that when the fires are burning low in the crucible of youth, varicocities give us less trouble, ovariectomies are not so much in demand, hysteria, neurasthenia and its myriad manifestations are not so much in evidence. Time works many changes, and often for the benefit of humanity in general. So much for surgery.

How about medicine? Just as many and as radical changes. It would take well into the night to recall all of them. Not so many years ago our pharmaceutical houses were working overtime to produce some new antiseptic solution or powder, to be used when any surgical operation was to be performed, from a cut finger to a capital operation. Another set of fellows were working as many hours and just as hard to discover some new diarrhea mixture for cholera infantum in children during summer time. But we have learned that cleanliness in surgery and cleanliness in milk and food was what we needed more than antiseptic solutions and diarrhea mixtures.

I remember what an old up-to-date doctor once said, who had realized that "There was something new under the sun." He said this was what we used to do: "A man got sick, we visited him, tied up his arm and bled him till he fainted, gave him tartar emetic and puked him, gave him calomel and jalap and purged him, and had the audacity to go back the next morning and ask him how he felt." The answer is easy. How in Hades could he feel after such treatment? Yet it was practiced. The idea that bad blood only was removed by bleeding has long since been discarded by the profession, much to the benefit of mankind.

The tendency at the present time seems to be: What cannot be talked out of you by the Christian Scientists, can be rubbed out of you by the Osteopaths; and if there is anything left, the surgeon will cut it out for a consideration, and there you are.

At present, the tendency seems to be to laugh, poke fun and burlesque the country doctor. But to my mind, when the country doctor has instructed some young mother how to feed, clothe, and care for her offspring, that it may grow to man or womanhood, has done as much or more for the world and humanity as he who wields

the scalpel in appendectomies, ovariectomies, or gastrostomies.

Now, in times of these rapid changes, what is to be done? When doctors disagree, who shall decide? I cannot. If I were to suggest, it would be: Do not be carried off your feet by every wind that blows, I care not from what source or from which direction it comes. Prove all things and hold fast to that which is good, until it has been demonstrated that there is something better. Have opinions of your own and confidence in your skill and ability. In other words, be yourself and you will be somebody; but if you try to follow everybody, you will be many times nobody.

CONTAGIOUS DISEASE SITUATION IN ILLINOIS.

Smallpox: During the month of November, 1915, smallpox was reported to the State Board of Health from the following communities: West Hammond, 22 cases; Springfield, 13 cases; Lacon, 14 cases. The reports of this disease as compared with the corresponding months a year ago indicate a 50 per cent reduction in prevalence.

"WATER POX" PROVES TO BE SMALLPOX.

Investigation of an outbreak of smallpox in Edwards and Wayne Counties in October resulted in the finding of 48 cases.

The origin of the outbreak was traced to a boy who had been visiting at Mount Carmel, where he was exposed to smallpox and who soon after his return to his home in Edwards County developed the disease. The spread of the disease was due in a large part to the diagnosis of a number of cases as "Waterpox" and, therefore, lack of smallpox quarantine.

Diphtheria: Reports from points outside of Chicago indicate an unusual prevalence of diphtheria in the following towns and cities: Springfield, 73 cases; Belleville, 29; East St. Louis, 29; Mt. Carmel, 23; Granite City, 12; Centralia, 18; Moline, 10; Salem, 10; Du Quoin, 10; Batavia, 10; Gillespie, 8, and Farmer City, 7.

Demands for antitoxin, which were very heavy during the early days of November, showing a marked falling off towards the close of the month, and now are not heavier than is customary at this time of the year.

Scarlet Fever: The following cities, excepting Chicago, reported more than the usual number of cases of scarlet fever for November: Peoria, 48; Decatur, 30; Mt. Carmel, 29; Springfield, 20; Pecatonica, 14; Mattoon, 12, and Griggsville, 10.

Typhoid Fever: This disease, which showed signs of reaching epidemic proportions in September, has now subsided to less than its usual prevalence for this

season of the year. During September and October the call for anti-typhoid vaccine far exceeded the demand of the preceding eight months of the year, 7,818 packages being distributed through the State Board's 400 agencies throughout the state.

The typhoid epidemic at Petersburg and other parts in Menard County, which developed in September and involved some 180 cases, has been completely suppressed. Investigations clearly establish the fact that the source of infection was a polluted well water supply on the Old Salem Chautauqua Assembly grounds, the wells having been contaminated by flood waters of the Sangamon river, the latter being little more than a big sewer.

At the request of the Mayor and City Council of Petersburg and of the board of health of Menard County, the State Board of Health took charge of the situation late in September and, through the hearty cooperation of the medical profession, the county and municipal authorities and the citizens generally, no great difficulty was experienced in holding down the development of secondary infections and in rapidly clearing up the situation.

The sanitary engineering forces of the State Board of Health made an exhaustive investigation of the situation and on their findings some very definite recommendations for improvements have been made. The Chautauqua Association has been directed to abandon the present source of water supply, to extend and improve its sewer system, to install new toilets and to make many other needed improvements. These grounds will not be thrown open to the public until the necessary changes and improvements have been made.

PUBLIC HEALTH IS PURCHASABLE.

No funds expended for the protection of public health pay greater dividends than investments for the conservation of child life. It may be taken as fundamental that liberal appropriations for this purpose, wisely expended, will not only reduce the morbidity and mortality during infancy and childhood, but will thereby reduce the general death rate at the same time.

A comparison of total appropriations during 1915 by the Departments of Health of New York City and Chicago shows a per capita expense in New York of 62.9 cents; Chicago, 44 cents (exclusive of garbage reduction), New York's excess over Chicago being 43 per cent. The latest available death rates (1914) per 1,000 were: New York, 14.02; Chicago, 14.19.

The amounts expended for conservation of infant life show a still greater disproportion, the New York per capita being nearly 2.9 times the Chicago investment. The death rates under one year of age per 1,000 living at all ages in 1914 were: New York City, 2.49; Chicago, 2.87. Had the rate in Chicago been as low as the New York rate, 907 lives would have been saved during the year out of 6,880 deaths under one year of age. This clearly indicates that Chicago is not doing her duty in the matter of health appropriations.

(From Bulletin, Chicago Department of Health.)

ILLINOIS MEDICAL JOURNAL

Published monthly by The Illinois State Medical Society, under the direction of the Publication Committee of the Council.

GENERAL OFFICERS 1914-15

PRESIDENT.....CHARLES W. LILLIE, East St. Louis
 PRESIDENT-ELECT.....WILLIAM L. NOBLE, Chicago
 FIRST VICE-PRESIDENT.....F. S. O'HARA, Springfield
 SECOND VICE-PRESIDENT.....H. P. BEIRNE, Quincy
 TREASURER.....A. J. MARKLEY, Belvidere
 SECRETARY.....W. H. GILMORE, Mt. Vernon
 (Ex-officio Clerk of the Council)

THE COUNCIL

District 1—EMIL WINDMUELLER, Woodstock.
 District 2—EDWIN S. GILLESPIE, Wenona.
 District 3—CLYDE D. PENCE, Chicago.
 District 4—AUGUST H. ARP, Moline.
 District 5—C. S. NELSON, Springfield.
 District 6—C. D. CENTER, Quincy.
 District 7—C. F. BURKHARDT, Effingham.
 District 8—E. B. COOLEY, Danville.
 District 9—FRANK C. SIBLEY, Carmi.
 CLYDE D. PENCE, *Chairman*, 3338 Ogden Avenue.

Send original articles and all communications relating to advertisements and mailing list to Dr. Clyde D. Pence, Editor, 3338 Ogden Avenue.

Membership correspondence to Dr. W. H. Gilmore, Mt. Vernon, Ill.

Society proceedings and news items to Dr. Henry G. Ohls, *Managing Editor*, 927 Lawrence Avenue, Chicago.

Contributors will submit all copy for publication typewritten on standard size paper and double spaced. Copy not complying with this rule will be returned, if convenient.

DECEMBER, 1915

Editorials

"PEACE ON EARTH, GOOD WILL TOWARD MEN."

Let us not regard this beautiful Christmas sentiment in a perfunctory manner and think of it merely as a passage from the Scriptures that we see only at yuletide. Why not let this sentiment prevail throughout the year?

In the days of yore, Christmas meant the gathering together of family connections and domestic felicity, when there were planning and preparations to give happiness to those near and dear; when parents gave gifts to their own children, when children gave gifts to their own parents; when grandparents remembered their own grandchildren, and grandchildren remembered their own grandparents; when uncles and aunts were generous to their nephews and nieces, when nieces and nephews were kind to their uncles and aunts; when relatives and friends bestowed good things on their relatives and friends. But now times have changed; there exists a greater spirit of goodfellowship; more thought and consideration are given to those who have been less fortunate in life's race; we are not so self-centered.

There never was a time when there was so much Christmas charity dispensed. Many families are relieved of privation, and Good Fellows bring joy and happiness to many homes.

When we retrospect the year that has passed, we realize that there is much to be thankful for, and discover that many of our anxieties were only anticipated; that our fears have not materialized; that we have been guided out of turbulent waters into the calm; that business conditions have improved wonderfully; that there is more confidence displayed, and less pessimistic talk.

But, naturally, there is a cloud upon the horizon of our festivities, when we think of the terrible internecine strife that is waging on the other side of the Atlantic, and we cannot understand that any good can come from such an evil. If a careful diagnosis of this gigantic war is made, we shall discover that the etiology is embodied in one word—"selfishness"—that there does not exist "Good Will Toward Men." It is said that selfishness is the root of all evil, and the only prophylaxis is its eradication from human nature. Let us sincerely hope that by next yuletide we shall truly have "Peace on Earth, Good Will Toward Men," and that Christmas will mean a gathering together of the beligerents to sit at the Board in the Palace of Peace, sadder but humbler sons.

EFFICIENCY OF CHARITABLE HOSPITALS.

Efficiency of a charitable hospital is not accomplished by forcing upon the poor a service they do not wish, but, in the nature of things, must accept. In Cook County stands one of the largest charitable hospitals in the world; erected and maintained from public taxes, and under the direct control of the county commissioners. In this institution each year are treated thousands of the poor, and, perhaps, some others.

It so happens that in large cities many people are ill, who are compelled, through force of circumstances, to accept charity, and to accept free medical and hospital service. In the natural course of affairs, the majority of these people have had family doctors, who have taken care of them satisfactorily in the past, and whom they prefer to have care for them. Every physician

in Cook County, and every other county, frequently takes care of charity patients, yet, is denied the privilege of taking care of any patient—charitable or otherwise—in the Cook County Hospital. A child placed in the isolation ward may not be seen by the family physician. The doctor who sees other contagious cases and visits from house to house and in other hospitals, immediately becomes a menace to the community if he should be allowed to visit the contagious department, and is restrained from visiting that patient or ward. A patient speaking only a foreign language, of whom there are many in Cook County, may not even have the advantage of having a physician with whom he may converse, and for that reason may know little of either his condition or proposed treatment. It is stated that there are about seventy languages spoken in Chicago, and many of the people speaking the foreign language, speak no other; hence, they are not able to speak to the doctor who may be selected to treat them.

In this institution no medical services are paid for—all medical attendants giving their services gratuitously to the County. This is in itself wrong. A physician is not giving charity when he gives his service to the commonwealth, and no stretch of the imagination can make it charity. The institution is a teaching institution, in so far as a few men may hold clinics. It should be a teaching institution and be open to all medical colleges and all students, and this should be free, but why are doctors who are not on the staff, prohibited from treating patients in its wards? There can be no reasonable objection to any licensed practitioner attending patients here, and they should be allowed the privilege. Doctors are allowed the privilege of paying for maintaining the institution. The privilege of treating patients in the County Hospital, while not paid for directly, is much in demand, the aspirants for the positions giving up much time and labor for the opportunity. Then why the urgent desire of a few men to attain these non-paid-for staff positions? There are two incentives—first, the opportunity afforded by the position for learning and experience; second, for the self advertising obtained from such positions—and the latter is not the least of inducements.

A hospital paid for and maintained by all the people, including the doctors, should be open to

all the legally licensed physicians, and the people should have the opportunity of choosing their own medical attendant. No other method is right or equitable, either for the physician or for the patient, nor is the efficiency of the hospital at its maximum until both the patient and physician are given what is right and equitable.

The privilege of attending patients in the County Hospital by all physicians in nowise prevents its being maintained as a teaching institution. A consulting and teaching staff should be maintained, and there would be all the material needed for clinics, or any patient might be used as a clinical patient. Furthermore, many of our best medical clinicians are not now on the staff of the County Hospital, and under the present regime both the students and physicians are deprived of their clinical teaching. As a teaching institution it has not nearly reached its maximum efficiency. What greater need has a community than that of having its doctors educated up to the hour. The few favored doctors do not treat the entire public, nor any great portion of it. A physician must constantly be learning; must be constantly striving to increase his knowledge of disease and of therapeutics. It is the duty of the community to have its doctors abreast of the times. How better can a community educate its doctors and keep them educated up to the standard of the day than by having them all get the benefit and the experience of its public hospitals. Why should not every physician be given the privilege of such institutions? Under the present and former regime the medical and surgical treatment and care of patients have been much criticized—whether justly or not. Had the institution been open to all physicians and the light of publicity given in all its methods, this criticism would not be such as it has been. If all physicians were accorded equal privileges within the institution, children taken there, suffering from one contagious disease, would not be endangered from all the contagious diseases of childhood, for the profession would not tolerate such conditions and publicity would compel a higher efficiency.

EUGENICS AGAIN.

Two events the past month have focused the attention of the profession and the public on the subject of eugenics as no amount of academic

discussion had done in a decade. The lesser of these events was the inauguration of sterilization at the Wisconsin home for feeble-minded at Chippewa Falls. This was the culmination of progressive sentiment that seeks to stop the production of defectives at the source.

The other event which ranged the conservative and progressive forces in battle array revolved about the propriety of performing an operation for artificial anus on a new born baby which might or might not extend its span of life beyond the five days it attained. The child was defective physically in various ways. The physician in charge and the parents were convinced that it could only lead a life of suffering with the chances very greatly against its reaching maturity. There was doubt about the child's mental condition. The coroner's jury's principal findings were as follows:

7. We believe that morally and ethically a surgeon is fully within his rights in refusing to perform any operation which his conscience will not sanction. We find no reason to believe that the parents of Allan J. Bollinger were deprived of the privilege of consultation.

8. We recommend strongly that in all doubtful cases of this character a consultation of two or more surgeons of known reputation for skill, ethical standing and broad experience should decide upon the advisability or inadvisability of operative measures.

9. We believe that the physician's highest duty is to relieve suffering and to save or prolong life.

Section 7 of the verdict exonerates Dr. Haiselden of legal liability. The following sections charged him with bad judgment, by implication:

4. We believe that a prompt operation would have prolonged and perhaps saved the life of the child.

5. We find no evidence from the physical defects that the child would have become mentally or morally defective.

Altogether the verdict looks like a Scotch verdict: "Guilty, but not proven."

The State Board of Health announces that it will investigate the case, and we venture the prediction that the Board also will find the Doctor within his rights as far as refusing to operate is concerned.

There is another angle to the affair that is not so easily disposed of. This is the question of ethics involved in the Doctor's play for publicity in the *Chicago American* articles, begun November 22 and running serially since that date. Is it sufficient to state in defense that prominent men standing in the forefront of the

profession have besmirched themselves with the same tar?

LATEST ACTIVITY OF THE CHICAGO LEADERS OF THE AMERICAN COLLEGE OF SURGEONS.

We are informed that through some political chicanery a group of Chicago physicians, the leaders of whom are the same individuals who organized the American College of Surgeons, have gained full possession of the clinical facilities of Cook County Hospital, and are selling such privilege at the rate of five dollars a month to post-graduate students. Formerly physicians and medical students could buy hospital tickets, entitling them to the privilege of the clinics for a year, for five dollars.

We do not know why the leading spirits of the American College should assume to control the clinics of the County, but we are in a greater quandary to know why such power should be given to them, or any other group of men, and in just what manner they secured it.

Cook County Hospital should and must be maintained as a teaching institution, and every medical student and graduate physician should be allowed the privilege of attending all clinics. How may a community receive from the medical profession a better service than by keeping all the physicians educated up to the latest in medicine and surgery, instead of farming out to a few individuals the facilities of education—its charity clinics.

We shall be interested to know what reason or explanation our County Commissioners may make for granting the privilege of selling clinic tickets to a clique of men, to the exclusion of others interested. We would ask the President of the County Board why this privilege is not granted to other individuals? Why do not the Post Graduate Medical Schools of Chicago—those that have been here for years—have these privileges? We should like to have the President of the County Board tell us what, if any, remuneration these gentlemen pay for this acquisition, and does the hospital receive it, or where does it go? Does the President of the County Board think the opportunity of learning from clinics, where the diseased poor of Chicago are treated, should be controlled by a few men, that they may sell such privilege?

We would also ask the President of the County Board if he does not think all the physicians of Cook County should have the privilege of these clinics, and that all Post Graduate Schools here should have access to them. Are not the people who pay for the maintenance of this hospital, interested in educating the doctors in the county, and would it not always be the better investment?

We are informed that the same group of gentlemen have taken steps to secure the clinic privilege of the State Eye and Ear Infirmary in Chicago, but that the deal is not yet consummated.

Verily, there is no limit to their aspirations and apparently no regard for the rights of either the community or the profession.

ACTIONS FOR CIVIL MALPRACTICE.

Fifteenth Article.

ROBERT J. FOLONIE, L. L. B.,
CHICAGO.

In concluding this series of articles, their purpose will have failed unless the impression on the whole has been left that such actions as a rule are baseless and should be fought relentlessly.

The physician who conducts himself with due regard for the rights of his patient, considers his profession as one of continual progress and who does not permit the human element to become submerged in his professional pride, may meet such claims with a high-minded assurance that they can cause him only a temporary annoyance.

It is not at all essential to keep the possibility of malpractice claims constantly in mind, nor on the contrary is it the part of caution to ignore the possibility of their assertion. When an unjustifiable claim is presented and the first feeling of anger and mortification has subsided, it should give way to a loftier attitude.

Not uncommonly the prosecution of such claims embitter him against whom they are presented, but when properly viewed, it is only a hurdle in the path of the runner which should increase his strength.

Like Balzac's "Country Doctor," he upon whom such misfortune is visited, may in time come to the mellowed state, where it may be truly said of him:

"I thought that you had suffered,
When I saw how kind you were."

The true province of the physician is that of the friend and advisor of his patients in his community. If to untiring effort and increasing skill is added a kindly heart, he will enlarge the circle of those who love him. If he so disposes his life, he may expect to have engraved in the hearts he has lightened, when he himself shall be healed, the simple and noble epitaph of the good man Balzac described:

Here Lies

THE GOOD MONSIEUR BONASSIS

THE FATHER OF US ALL

Pray for Him.

KNOCKS AND BOOSTS.

While we are always very glad to receive commendatory criticism—it is stimulating to our ego—we are not much given to publishing boosts of our JOURNAL. We think our members are capable of judging of the merits and value of the JOURNAL for themselves. This month, however, we publish the following, which more than pleases us, because it gives us the advertisers' point of view, and recommends us to the higher class advertising:

To the Editor: I shall soon send you advertising from the Chicago Laboratory.

Let me say I have selected your JOURNAL, among others, because of its scientific articles, good editorials on live subjects, interesting book reviews, correspondence, make-up, etc.

There are some State Journals I will not use under any circumstances, for the simple reason that they offer little to their readers, being mere collections of papers and perfunctory items published pretty much in the order received, without regard to value.

Some one has said that business goes where it is invited and remains only while well treated. May I expect the Editor's co-operation?

If we can make our advertising matter so interesting that it deserves comment, let us have it! Show the advertiser that his copy is not a billboard at which your readers may glance, but an essential part of your JOURNAL, subject to praise or criticism, as the case may be.

With best wishes, I am,

Very truly yours,

E. J. DOERING.

ST. MARY'S HOSPITAL.

The dedicatory exercises of a new addition to St. Mary's Hospital, Streator, Illinois, was followed by a banquet for the doctors of Streator. This hospital is now up to date in every respect and has a capacity of one hundred and twenty-five beds.

St. Mary's Hospital was originally founded by the late Colonel Plumb, in 1885, and when at first put into operation, contained thirty beds and an operating room. In 1902 it became necessary to build an addition for twenty-four beds and a more modern operating room. In 1910 the hospital had outgrown its capacity, and a third addition was made, with twenty-one additional beds. This year its capacity was overtaxed and it was again rebuilt, so that now one hundred and twenty-five patients may be accommodated. Its equipment is of the latest, containing a laboratory for diagnostic purposes, as well as the making of seras, vaccines, etc., and also contains one of the latest x-ray equipments.

After dinner was served, Dr. E. E. Perisho was introduced as toastmaster. The speakers of the evening were:

Dr. H. S. Lester: Tribute to the Sisters and Building Committee.

Dr. E. E. Clark: Our Hospital.

Dr. Harwood of Ransom: Humorous Side of the Practice of Medicine.

Dr. G. K. Wilson: The New Laboratory and Its Uses.

Dr. A. M. McCord: My Western Trip in My Overland.

Dr. R. Schurtz: Reminiscences of the Past.

Dr. L. D. Howe: Stories.

Dr. R. Sexton: A Comparison of the Old and the New.

Father Schraub, Supt. of St. Mary's Hospital Building Committee: Why St. Mary's Hospital of Streator Has Been Successful.

Correspondence

THE PRESIDENT.

To the Members of the Illinois State Medical Society, Greetings:

The season of the society activity is at hand and your president urges you each to do his share in the work which is demanded of the organized

profession; first, attendance at the meetings is of the highest importance; second, taking part in the proceedings, either by presenting papers or taking part in the discussions; and third, by encouraging a spirit of good-fellowship, a very necessary part of the equipment of the "good" doctor; these are not only duties, but large contributors to our own satisfaction and success. The selfish, self-satisfied, unsocial doctor is a misfit in the medical profession, and the sooner he recognizes this fact the better will it be for himself as well as for his clientele.

There is another aspect of the medical question which is of the highest importance, and that one is the "relationship of the doctor to the public" and his duty as a custodian of the public health. To the end that he may serve the public in the best possible manner the commercial spirit must be kept under subjection, and the people given the very best service that can be given. This service, I believe, all our members are willing to render when their advice is sought; but there is something beyond this which I would earnestly commend as a part of our professional obligation, and the coming winter offers an excellent opportunity to carry on this important work. I here refer to the "education of the public on health questions."

We have a number of "preventable diseases" and we should take every opportunity to teach the people how to prevent them. Tuberculosis is one of these and the means for its prevention are well known to the profession, and it becomes our plain duty to pass this knowledge along.

Many cases of cancer are preventable if opportunity be given at an early period, and it is to impress upon the public the necessity for seeking the advice of the doctor before trying any other method that we should strive to gain their confidence; and having gained their confidence, we should warn them in time to prevent cancer from progressing beyond hope of recovery.

Let us each ask the teachers in our schools, and the ministers in the pulpits to help us in our efforts to better conditions among the people; let the people know that self-treatment is not safe; that none but doctors are qualified to determine the cause of symptoms, and that relief from distressing symptoms does not mean cure of disease; that the family doctor is the best friend.

Let us establish a closer relationship between

our profession and the people and prove that their best interest is all we are seeking when we ask the legislature for amendments to health laws.

C. W. LILLIE, President.

East St. Louis, Ill., Nov. 12, 1915.

BACTERIAL VACCINES.

The Evans Memorial for Clinical Research is desirous of coming into communication with as many physicians as possible who have used bacterial vaccines in the treatment of typhoid fever for the purpose of collecting statistics concerning the efficiency or non-efficiency of the method as a therapeutic measure. If any who have done this even with only one or a few cases will send their names and addresses, blank forms will be sent to them upon which uniform reports may be made. Due credit will be given to each in any reports that may be published. Kindly address all communications to Dr. W. H. Watters, 80 East Concord Street, Boston, Mass.

Public Health

STATE BOARD WILL ATTEMPT TO EXTEND RECIPROCITY LICENSE PRIVILEGE TO INCLUDE OLDER PRACTITIONERS.

AMENDMENT TO PRESENT MEDICAL PRACTICE ACT NECESSARY.

To the older practitioners of the State of Illinois, perhaps the most important and the most acceptable announcement from the office of the State Board of Health in many years is that of the Board's intention to present an amendment to the Medical Practice Act at the next session of the legislature, the enforcement of which will permit the extension of the reciprocity licensing privilege to all reputable, regularly licensed physicians of the state.

Under the terms of the Medical Practice Act in force at the present time, the reciprocity licensing privilege is available only to such physicians as have been licensed since July 1, 1899, by examination.

This deprives fully 75 per cent of the practicing physicians of Illinois of the reciprocity privilege and when one stops to consider that among these are included the most skillful, the most widely and favorably known practitioners of the state, men who by reason of a long experience in the practice of their profession are much better qualified to render good service to the public than men just out of college, and men who in no inconsiderable proportion are or have been the teachers of the younger generation of practitioners who make up the favored 25 per cent, one cannot fail to be struck with the injustice, if not stupidity, of the prevailing reciprocity provision of our Medical Practice Act.

So far as it is known there is no disposition to

deny the older practitioners the legislative relief they desire and certainly are entitled to.

At the present time Illinois maintains reciprocal licensing agreements, affecting only physicians licensed through examination, with the following states, the dates to which reciprocity extends and the fees required being as shown:

For Physicians		
State.	licensed since	Fee.
Arkansas	Aug. 6, 1909	\$25.00
Indiana	March 11, 1901	50.00
Kansas	June 9, 1901	50.00
Kentucky	June 10, 1904	25.00
Louisiana	Nov. 28, 1910	25.00
Maine	July 1, 1899	25.00
Maryland	July 1, 1899	25.00
Michigan	July 1, 1899	50.00
Minnesota	July 1, 1899	50.00
Missouri	April 1, 1907	25.00
Nebraska	Aug. 1, 1903	25.00
Nevada	May 3, 1905	25.00
New Jersey	July 1, 1899	50.00
North Dakota	July 1, 1905	25.00
Ohio	Jan. 1, 1900	50.00
Utah	July 1, 1899	25.00
Vermont	July 1, 1899	50.00
West Virginia	July 1, 1899	25.00
Wisconsin	July 1, 1899	50.00
Wyoming	Sept. 8, 1905	25.00

CIVIL SERVICE NOTES OF INTEREST TO PHYSICIANS.

DISTRICT HEALTH OFFICERS.

The examination for District Health Officer, a new service lately established by the State Board of Health, has been postponed from November 27 to January 8, 1916, on account of lack of a sufficient number of candidates, only five applications being on file.

Four positions in this service are open to medical practitioners of Illinois over 25 years of age. The present salary is \$150 per month, with a range of \$300 per month without subsequent examination. Traveling expenses to the amount of \$125 are allowed.

Officers of this service are to be located in Rockford or Chicago, Galesburg, Springfield, Mattoon, or Champaign, Mt. Vernon or Centralia.

The scope and weights for the examination as established by the Illinois State Civil Service Commission, to whom applications should be addressed at Springfield before January 1, are as follows:

Training and experience, 4; special subjects, including questions regarding sanitary inspections of all kinds, control of epidemic, and supervision of such work in a district comprising about one-fourth of the state, with a supplementary oral interview, 6. A minimum grade of 65 is required on the written portion of the special subjects. Those so qualifying will be assembled later for the oral interview.

(Continued on page 452)

Auto Sparks and Kicks

ANTI-FREEZING MIXTURES.

Alcohol, glycerine and calcium chloride are the three substances that are most generally used for anti-freezing mixtures, but this year glycerine is almost too expensive to be considered with the price averaging \$4.50 per gallon. There are many other liquids that have a low enough freezing point, but are objectionable because they evaporate too quickly, do not carry away the heat rapidly enough, corrode the parts of the cooling system, leave a deposit in the radiator, do not flow freely or are too expensive.

A solution of alcohol in water most nearly fills the requirements of a perfect anti-freezing mixture. Either wood or denatured alcohol may be used.

The advantages of alcohol are that it is very easily handled, and has no corrosive action on the cooling system.

ETHYL OR GRAIN ALCOHOL (DENATURED.)

This is probably the most satisfactory solution. It is not quite so volatile as wood alcohol, that is, it does not evaporate so easily or quickly, hence it does not have to be replaced as often. On the other hand, for the same percentage solution, it does not lower the freezing point as much as wood alcohol. On the whole, however, if the freezing point is not to be so low, it is preferable to wood alcohol.

METHYL OR WOOD ALCOHOL.

It has a low freezing point, but evaporates rather easily. Wood alcohol produces a lower temperature, for the quantity added to the water, than any of the substances, except calcium chloride. Great care should be taken, however, to test the strength of the solution, as wood alcohol has a low boiling point and evaporates rapidly. The sense of smell should not be relied on, as even a very weak solution will, especially when warm, give off a very strong odor. If alcohol solutions are used, either wood or denatured, a hydrometer should be used daily during cold weather to test the strength. A percentage table with specific gravities usually accompanies the hydrometer.

The number of parts of wood or denatured alcohol to give a certain freezing mixture may be obtained from the following tables:

WOOD ALCOHOL SOLUTIONS.

Pct. of Alcohol	Pct. of Water	Freezes at
10	90	18 above zero
20	80	5 above zero
30	70	10 below zero
40	60	23 below zero
50	50	35 below zero
60	40	50 below zero

DENATURED ALCOHOL SOLUTIONS.

Pct. of Alcohol	Pct. of Water	Freezes at
10	90	25 above zero
20	80	15 above zero
30	70	8 above zero
40	60	zero
50	50	10 below zero
60	40	18 below zero

THE LATEST ON A FORD.

A chiropodist received a call from a woman stopping at the hotel and on being shown her room, found her in a kimono. "Will you promise to trim my corns and keep your mouth shut?" asked the woman. He assured her he would, but began to protest when she started to remove her kimono. "Lady, lady," he implored, "you mustn't do anything like that." "Listen to me," said the woman heatedly, "I've ridden all the way from Colorado in a Ford and I guess I know where my corns are better than you do."

TO REMOVE RUST FROM STEEL.

Steel which has been rusted can be cleaned by brushing with a paste compound of $\frac{1}{2}$ ounce potassium cyanide, $\frac{1}{2}$ ounce castile soap, 1 ounce whiting, and water sufficient to form a paste. Afterward the steel should be washed with a solution of $\frac{1}{2}$ ounce potassium cyanide in 2 ounces of water.

The cyanide is one of the deadliest of poisons and should be handled accordingly.

COOLING HOT MOTOR.

"When a motor is hot care should be taken not to pour cold water into the cooling system too rapidly. When the cold water strikes the overheated cylinders it is very apt to crack same, due to the rapid contraction which takes place."

Society Proceedings

ADAMS COUNTY

The Adams County Medical Society held the first evening meeting on Monday, November 8, at 8:30 p. m., at the Hotel Quincy. About thirty-five members were present, and each one seemed to be prepared to discuss any subject that came along.

President Whitlock called the meeting to order. The minutes of last meeting were read and approved. The secretary read a communication from the State Secretary (Dr. Gilmore) in reference to payments of dues, etc.

Dr. G. E. Fuller, who has been taking care of the practice of Dr. W. E. Miller during the latter's absence in California, was admitted to membership.

The scientific program was opened by Dr. C. W. Lillie, president of Illinois State Medical Society, who read a very interesting and carefully prepared paper on "Cancer." The doctor spoke at length on the etiology, symptoms, varieties and treatment of cancer. Those taking part in the discussion were Drs. Christie, Nickerson, Williams, Johnston and Stine. This was followed by two papers on "Diabetes Mellitus." One by Dr. Stine on the symptomatology and etiology, and the other by Dr. John Koch on treatment. Dr. Stine showed two charts illustrating the progress toward recovery by two patients, but on a strictly carbohydrate diet. Dr. Koch spoke particularly about the Allen Treatment, and the remarkable results obtained thus far. Both papers brought forth a long and interesting discussion.

Before adjourning, a rising vote of thanks was given to Dr. Lillie for the honor conferred upon the society by his presence, and also for his able paper.

Through the kindness and thoughtfulness of Dr. J. L. Aleshire and his splendid wife, the members will enjoy a fried chicken supper at Plainville on Wednesday, November 17.

The meeting adjourned and we went to the private dining room, where each one did justice to the good things served.

If all the evening meetings are as enthusiastic as the first one, they will be continued indefinitely.

ELIZABETH B. BALL, M. D., Secretary.

COOK COUNTY

CHICAGO MEDICAL SOCIETY.

Regular Meeting November 3, 1915.

1. Demonstration of an Unusual Case of Lung Abscess Emil Beck
2. Labor Controlled by Rectal Examination.....
..... Rudolph Holmes
Discussion..... Emil Ries
3. The Value of X-Ray Examination in Pulmonary Disease from the Standpoint of the General Practitioner..... E. S. Blaine
Discussion..... { Arthur F. Beifeld
 J. F. Hultgen
 Roger T. Vaughan

Regular Meeting, November 10, 1915.

1. Pneumonia: Its Statistical Importance..... John Dill Robertson
 2. Prevention of Pneumonia..... N. S. Davis, Sr.
 3. Value of Specific Treatment in Pneumonia...
..... Joseph L. Miller
 4. Empyema..... H. M. Richter
- Preceding the scientific program Mayor William Hale Thompson addressed the Society on Infant Welfare Plans.

Regular Meeting, November 17, 1915.

- Some Lines of Development in the Modern Therapy of Disease..... Charles H. Mayo
Rochester, Minn.

Preceding Dr. Mayo's address, Mr. Gilbert McClurg presented "Panoramic Colorado," a travel talk illustrated with colored lantern projections.

Regular Meeting, December 1, 1915.

1. Swimming Tank Conjunctivitis... Harry S. Gradle
Discussion..... George F. Suker
2. The Roentgen Examination of the Appendix M. J. Hubeny
Discussion..... Joseph W. Rowntree
3. Co-Operative Method of Diagnosis..... Carl Beck
Discussion..... Ralph Webster
Truman W. Brophy
Adolph Gehrmann
Maximilian Herzog

CHICAGO LARYNGOLOGICAL AND OTALOGICAL SOCIETY, MEETING OF MARCH 16, 1915.

DISCUSSION ON LATERAL SINUS THROMBOSIS— *Continued.*

DR. FRIEDBERG—*Continued.*

There is another class of cases we see in which the symptomatology of sinus thrombosis is simulated, and that is in severe types of scarlet fever. He has seen a number of these cases complicated with ear conditions, in which a mastoid operation was necessary. Good drainage was secured, but still the irregular type of fever and chills occurred, which warranted one in opening the sinus. In two of these cases he recalled definitely he was unable to find anything in the sinus. There was free bleeding above and below. There was the whole picture of sinus thrombosis, complicated with metastases in the lung and spleen, also joint involvement, and practically nothing in the sinus. This shows that it is not always easy to make the diagnosis in these cases, even in the presence of a typical sinus picture. It must be borne in mind that sinus thrombosis in any other part of the body of a large vein will give the same picture. He believes that if we wait too long, however, in these cases of suspected sinus thrombosis we are defeating our own ends. Personally, he does not care about going into the sinus unless he feels the indication is clear, but he feels that he has been a little bit too conservative in that respect.

Dr. L. W. Dean, Iowa City, said that eleven years ago, following a mastoidectomy, a patient developed a septic temperature with chills. Temperature was as high as 105°. Sinus phlebitis was diagnosed and the sinus operated. It was found to be normal. The day following the operation on the sinus, erysipelas developed. Fortunately there was no serious result. Since that time in his service the rule has been never to operate upon a sinus until erysipelas has been excluded.

In many cases operation has been prevented by close adherence to this rule.

Dr. Robert H. Good said that in one of his cases there was never a discharge from the ear. On Christmas the patient had a cold and complained that she thought there was some disturbance with the ear, but that was all the complaint made. Three weeks later she went to the Chicago Polyclinic and there was a swelling back of the ear at that time. The drum membrane and hearing were perfectly normal. She was treated for six weeks, at the end of which time she consulted the speaker, and he found a large swelling back of the ear. Hearing normal. Drum membrane normal. He decided to operate. As soon as he opened the mastoid there was pus escaping, which was pulsating, coming from the extradural space. There was a very extensive sinus thrombosis, so that he had to ligate the internal jugular. The point he wished to make was that there never was any discharge in this case. The pus discharged into the extradural space.

Dr. John A. Cavanaugh reported an interesting case of a simple mastoid, upon which he operated three weeks ago. For two days the patient's temperature was normal. The third day the interne phoned that the patient had gotten out of bed to go to the toilet and had fainted. When the doctor reached the hospital the patient's temperature was 102° and there was retention of urine, also a slight sensation of chilliness. He complained of the right side of his chest, which, on examination, showed a slight area of pneumonia. The following day the temperature shot up to 103.8°. Dr. Cavanaugh had one of his colleagues see the patient with him, and he said he thought the patient had a sinus thrombosis. A culture was made that revealed a pure pneumococcal infection, both in the discharge from the ear and from the mastoid process. A blood culture was made, which was negative. Leucocytosis was present. The fifth day the temperature was 100°. For three days the temperature ranged from 99° to 100°. Then it mounted to 103.8°. The same colleague again saw the patient with Dr. Cavanaugh, and then believed it to be an epidural abscess, but there were no findings to indicate such a condition, and Dr. Cavanaugh still thought it advisable to wait for more positive symptoms to help in the diagnosis. Gradually the lung condition subsided and the temperature—for the last four days—has been normal. This case was reported to co-operate with the conservative views expressed by Dr. Pierce.

Dr. Boot, in closing the discussion, said, with regard to the cases where there was suspected sinus involvement, there seemed no reason why the sinus should not be exposed and examined. Exposure of the sinus does no particular harm in the course of the mastoid operation, but it seemed to him to be decidedly not the thing to expose a sinus which we believe is thrombosed and contains pus, and do nothing more than expose it. It certainly is not surgical to leave an abscess without opening it, if we think there is pus in it, and it is not good surgery to leave a sinus which contains pus without opening it.

He was thankful to Dr. Pearce for not criticizing him more severely about the erysipelas case, because he talked this case over with Dr. Pierce before opening it. If he had taken his advice he probably would not have opened the sinus.

As to the question of waiting, he recalled a patient on whose mastoid he operated without exposing the sinus. The septic condition gradually increased and ended in death, finally, from pyemia. Post mortem disclosed abscesses in the spleen, lungs, walls of the intestines, and also in other places. This was a case where he believed, had the mastoid operation been done earlier, the general infection would not have occurred. There was no thrombus found in the lateral sinus at post-mortem. Nevertheless, the speaker believed the metastases took place from the mastoid, and had the mastoid operation been done earlier the child might still be living.

The question of blood cultures is probably, as Dr. Friedberg said, not of any great value in more than half the cases.

The case referred to by Dr. Sonnenschein had been seen by Dr. Boot. The man had absolutely no symptoms on which a diagnosis of lateral sinus thrombosis could be made. He

was simply profoundly toxic, and during the second operation Dr. Sonnenschein exposed the sinus and found it filled with pus.

The case reported in the paper, where the jugular vein was opened and found to be full of pus, was a case that should have been ligated earlier. In this case it was not ligated because the clot was found at the lower part of the incision. The vein was opened just above the clot, pus evacuated, and, fortunately, the patient recovered.

THE DIFFERENTIAL DIAGNOSIS OF LARYNGEAL MOTOR PARALYSIS.

Dr. Stein said that in all disturbances of motor stability of the larynx one must remember that there may be present an individual state of either spasm, paresis or paralysis, and that there may also be a concomitant state of two or all of these manifestations. In classifying paralysis, account must be taken of the variety, causes, anatomical relationship and associated symptoms. All motor paralysis of the laryngeal muscle originate from causes located centrally or peripherally. The latter constitute by far the greater number. The most frequent central causes are tumors, bulbar paralysis, multiple sclerosis, amyotrophic lateral sclerosis, general paresis, syringomyelia, apoplexy, softening and syphilis, which includes tabes. In syringomyelia there is both motor and sensory disturbance of the larynx, but there is associated involvement of the pharynx, soft palate and tongue. In paralysis of peripheral origin, the paralysis is due to some interruption in the transmission or reception of the motor impulse, and caused by contiguous pressure, inflammation or degeneration of the nerve elements. The pressure may be occasioned by a tumor, gland, aneurysm, adhesions, foreign body, etc. The inflammatory and degenerative cases may be due to trauma, disease, drugs, etc.

It is of noteworthy importance to remember that there may be complete absence of all throat symptoms, even though a paralysis be present. Paralysis due to an enlarged or diseased thyroid gland, an aneurysm, and the like, is frequently overlooked and not recognized simply because the larynx is not systematically examined. If the larynx of every patient were carefully examined with a mirror, many paralyzes would be found that otherwise pass observation.

DISCUSSION.

Dr. Otis H. Maclay said he had been very much interested in the paper. He had a case some time ago in which the thyroid was enlarged, and which was about to be operated upon. In this case the enlarged thyroid was on the left side, with a hoarseness which had persisted for about three or four weeks. The findings showed a complete paralysis of the right side, which was the opposite side to the enlarged thyroid, with an over-adduction of the left cord in its effort to overcome the lack of adduction of the right side. Here was a cross pressure paralysis that was very decided. Operation was performed, and in about two weeks there was practically normal speech. The operation was performed for the removal of the goiter on the left side. The voice cleared up, as above stated, in a very short time.

Dr. Charles H. Long reported the case of a man, apparently in good health, fifty years of age, with abductor paralysis of three months' standing, coming on very suddenly, with no apparent cause. The patient denied lues. A Wassermann test was twenty-five per cent positive. Intravenous injection of salvarsan three weeks ago. The aphonia is the same. He is taking 60 grains of K. I. daily.

Dr. Stein, in closing the discussion, in reference to Dr. Maclay's case, said that if the cords had not been examined as in his case, and the voice returned, one must not be misled in believing that the paralysis had been restored, because frequently the voice will return, of course, from a compensation of the opposite cord. That is a well-known condition, which happens frequently after operations for goiter, where even the nerve is injured, and the paralysis, due simply to an injury or pulling or edema around the nerve, finally disappeared. Even if the cord does not return to its perfect function, the opposite cord eventually meets the paralyzed cord, and the patient has a very satisfactory voice. In Dr. Maclay's case the speaker could conceive of such a paralysis being due to a transmitted pressure, such as we have in some aneurysms. Removing the goiter in this case relieved the pressure from the opposite side.

As to Dr. Long's case, the speaker would like to inquire as to whether an x-ray picture was taken.

Dr. Long replied in the negative.

Dr. Stein looks upon many of these cases with a great deal of suspicion of aneurysm. He finds that we can diagnose aneurysm more often than any other class of medical men. Laryngologists should examine the larynx in all patients, as a routine measure. These patients come in for various symptoms, sometimes simply for diagnosis, sometimes for hoarseness, and the medical man has not made a diagnosis. In fact, internists admit that it is very difficult for them to make early diagnoses of aneurysm of the arch. The laryngologists may make it before the internists, and the x-ray first of all. It shows very prettily in x-ray pictures, and in many of these cases you can confirm a diagnosis with such a picture.

A DISCUSSION OF THE STANDARD TONSILLECTOMY.

Dr. Fletcher said that all other methods for complete removal of tonsils are compared to instrumental dissection; therefore, this is the present standard. It is a real operation, requiring great care, surgical ability, knowledge of technic, and is not to be taken lightly. Even competent general surgeons fail in tonsillectomy very frequently. That consensus of best opinion is not generally followed is shown by the frequency of tonsillotomy. No method which tears or requires force, such as the finger dissection or the Sluder, can replace an exquisite instrumental dissection. Unless we aim at an ideal and agree upon the essentials, there will be no general improvement. Perfection of this technic reduces failures to nothing. With rougher methods some cases must fail and many are not acceptable, especially to those who care for the voice. An ideal operation, from the writer's standpoint, is one which removes the tonsil completely within its capsule, without injury to or fusion of the superior constrictor, palato-glossus and palatopharyngeus muscles; conserves every bit of membrane reflected upon the tonsils, leaving a linear scar in a rudimentary tonsillar fossa; which does not change the normal shape of the palate or injure the voice; which lessens the probability of secondary hemorrhage, gives the greatest uniformity of desirable ultimate results, and never fails.

A technic was offered for discussion, with the greatest hesitation, as a contribution toward the attainment of an operation which will be eminently satisfactory to all operators. The main features are, first, a bloodless field. Make blisters around tonsil by injecting about ten minims to the tonsil of a solution of

cocaine hydröchlor, one grain; twenty minims, one to one thousand adrenalin; normal salt solution, eighty minims, just under the membrane at four points in both local and general anesthesias. For the local, inject twenty to thirty minims of novocaine into tonsillar fossa. Second, conserve all membrane possible, making incision entirely around the tonsil. Third, use no force or roughness. Employ sharp dissection of tonsil from fossa when blunt instrumental dissection is not easy. Fourth, use the snare only after the dissection is so complete that the tonsil falls over into the throat. Let the loop be as small as possible, and adjust it carefully to make diagonal instead of horizontal cut. Fifth, tie vessels which do not stop bleeding promptly, as a frequent cause of secondary hemorrhage is a buttonholed vein.

DISCUSSION.

Dr. Norval H. Pierce said that his technic in tonsillectomy does not differ especially from that described by the author of the paper. He does not believe in any operation other than dissection. He thinks it is a surgical procedure, not depending on personal dexterity or trickery. It can be done by anyone who is at all used to operating in this region. As to time, we should take as much time as necessary. Safety first. He thinks there is less hemorrhage from careful dissection than from the other methods—from the one instrument methods. But after examining some of his patients a year or two after operation, he has been, frankly speaking, impressed with the fact that the resultant conditions were not altogether satisfactory. He has sent his patients away with a sense of entire satisfaction. At the time of operation he has examined the tonsil and has accounted for every particle of it. And then, a year or two after that, these patients come back with a large piece of tonsil occupying one or both fauces. He supposes this is occasionally due to the pulling up of lymphoid tissue into the scar from the base of the tongue. That was the only way in which he could account for it. At one time he thought it unnecessary to take away the lower pole completely. He has found that that is a mistake. The lower pole gives trouble. The tonsil should be removed completely. Up to the present time he is not sure whether he knows just how to prevent the drawing up of that lymphoid tissue into the scar after a while. He could exhibit a number of cases showing just as good results as in the patients of Dr. Fletcher. But he does not know what causes the failure to secure ideal results in a certain percentage of other cases. He wished Dr. Fletcher would tell him whether he really believes there is something that prevents in all cases this dragging up of lymphoid tissue in the scar. Incidentally, he would add that he has had occasion to examine patients operated on by specialists of the first class, and he has observed the same unsatisfactory conditions which he has occasionally observed in his own cases.

Dr. G. S. Mikkelsen asked Dr. Fletcher how he got a linear scar with a circular incision without using sutures.

Dr. A. M. Corwin had been very much interested, in an anticipatory way, regarding what the standard operation was for tonsillectomy, because he does not know it. The standard operation for attack upon a tonsil that needs attacking for local lesion or for regional or systemic reasons is plain. That standard operation is tonsillectomy—tonsillectomy with the capsule, in spite of the fact that there are a few adherents even of removal of the tonsil just inside the capsule. He admires the skill of the gentlemen who can do that. Whether that operation will ever become standard is more than doubtful.

A standard is not established in a day, or in a decade; furthermore, it is a movable quantity. What is standard today is on the shelf tomorrow. This is the case not only in laryngology, but in general surgery and in medicine. There are clear indications, we will say, for removal of the tonsils, and

yet there are fifty-seven varieties of instrumentation and technic for their removal, and each one of these varieties is delivering the goods, whether in a minute or in a half hour. They are fulfilling the indications that were laid down by the speaker.

Dr. Fletcher's cases show very good results. Dr. Pierce had well said that just such results are seen every day. We are all getting those results by the methods that we choose to follow. Who shall say that the use of the scissors, in one or more of its different forms, is not to be standard in a decade or two? The speaker did not know. He knows gentlemen in this city who do very skillful work with the scissors, work certainly not to be improved upon. One of the most skillful operators in this country he has seen use a knife, a pair of forceps and a snare, and he takes out both tonsils, one after another, in ten consecutive cases, taking a fraction of a minute for each case, taking the adenoids out, too, in the same time, and doing it with as great precision as any of us. The speaker did not care whether a man uses a straight knife or an angular knife, or whether he uses three or four knives or instruments in doing a tonsillectomy, or whether the technic of the individual operator runs to simplicity, the point is the same—deliver the goods.

Of course, the members know very well that he is an ardent advocate of the Sluder method. There are many little technical points about the Sluder operation, and if you see a dozen Sluder men work you will find a dozen little different methods of technic, but the principles applied are all the same. And when one looks at the Sluder operation, and says that it is bunglesome, that it is merely a one instrument make-shift for good work, a mechanical uncertainty, and that its manipulator works in the dark and takes off two or three layers of this, that or the other thing, one is not really discussing with intelligence, as the facts do not bear out such crude criticism, chiefly from those who have never tried it.

Time only will tell what the standard operation is. Dr. Corwin did not think Dr. Fletcher had made good in telling the Society what the standard method of tonsillectomy is, because certainly the technic laid down in the paper is not standard, because it is not used by a majority of men in the country, men who claim to be skillful along this line. In order to make an operation "standard," the majority of men must adopt it. In the meantime, we will do the very best work we can with the different technics and different instruments.

Another point, with regard to hemorrhage. That is a matter that is greatly exaggerated, in Dr. Corwin's opinion. In a large number of tonsil operations, in both adults and children, he has never had to ligate an artery yet. He has never had to sew the pillars together or resort to any of those things that we lay down in text-books as things to be resorted to. If you have bleeding in this region and will apply pressure with styptis for a few moments, you will always control those cases, except in hemophiliacs. The speaker always operates in a hospital, unless proper facilities are available in the private home, and general anesthesia is employed. With properly applied styptis he has a practically bloodless pharynx. The Corwin tonsil hemostats are invaluable when used in pairs in adult cases.

Dr. Fletcher, in closing the discussion, said that the standard that we recognize is a tonsillectomy, and he also stated that we have not agreed upon a technic. And so he presented a technic for consideration. He did not mean to suggest for a moment that he could operate any better than a great many men, but being opposed to the Sluder method, it being a step backward, in his opinion, he so expressed himself. Being a one instrument affair, it seemed more clumsy to him. He did not mean to say that some operators by the Sluder method cannot acquire a great deal of skill, but he does not think the bulk of operators can. He has seen on the vaudeville stage a woman who wrote a very good hand, or foot, with her toes, so that when we practice enough we can apply skill in a great many unusual ways. But one can acquire the skill to take out tonsils as they should be taken out with dissection. He had stated in the paper that he did not insist on his technic being followed, but offered it for discussion as

opposed to the Sluder. He is not opposed to the gentlemen who follow Sluder, because he thinks they are just as earnest as others, but he thinks there is a more uniform way of taking out tonsils than can ever be acquired by any large number of men using the Sluder method. The latter traumatizes a great deal more and does not uniformly give as good a scar as dissection. One who can use the knife alone is to be congratulated. He, personally, cannot do it. All who use the Sluder method agree that it must be learned, and that there are certain cases in which it is not to be applied. Of course, one must learn the dissection. But the vast majority of men can learn a dissection more easily because the instruments are more handy.

In regard to Dr. Pierce's remarks, the speaker would not think of saying that he has never left any tonsillar tissue. But he has given his work the best that is in him, and considers that is his patients' due. No tonsillectomy is a trifling affair. He considers tonsillectomy a very keen operation, worthy of the skill of the best surgeon.

The extension of lymphoid tissue, referred to by Dr. Pierce, from the post-lingual tonsil into the fossa, is governed somewhat by the amount that is removed. If the loop of the snare is too large, it must of necessity lie over a considerable portion of this post-lingual tonsil, and if this is cut off you get a contracting scar, which is not desirable. If, however, the tonsil is dissected well down until it actually falls over into the throat, then the pedicle is quite small, and the snare can be put exactly over it. The amount of tissue to be cut in each case should be determined as an individual proposition.

In reply to Dr. Mikkelsen, the linear scar is produced by the conservation of membrane. We go as far as we can towards that end by saving all the membrane which can be saved. We only release that portion which is adherent to the tonsil, never from any part of the pillars. This membrane falls into the tonsillar fossa, which is tissue very well supplied with blood, and consequently granulates very rapidly, ultimately leaving only a rudimentary fossa. The covering process is like skin grafting. Fimbriae are thrown out, which meet at the central line, and there the scar forms. If you cut too much into the dense connective tissue at the lower pole, you get a contracting scar.

CHICAGO LARYNGOLOGICAL AND OTOLOGICAL SOCIETY

(Abstract.)

Regular meeting held April 20, 1915, with the president, Dr. George W. Boot, in the chair.

CASE OF CRUSHING INJURY OF FACE.

Dr. George W. Boot exhibited a man who had met with a crushing injury of face ten years ago, which resulted in complete loss of the nose. At the time of the accident the jaw was fractured on the right side, and four weeks later the nose began to decay, which continued for five years. During the last five years the process has remained stationary. The right eye has been removed. The nose is completely gone. The turbinates have been completely destroyed. The septum has been destroyed. The left eye is turned inward. He has only perception of light and ability to count fingers with the left eye. The speaker thought the case must be one of osteomyelitis. Dr. MacEwen said it was not a case of lupus or epithelioma, nor did it look like a tertiary syphilis. Wasserman faintly positive. An interesting point about the case is that neither the hard or soft palate is involved in the process.

DESTRUCTION OF SEPTUM FOLLOWING SYPHILIS.

The second case exhibited by Dr. Boot showed destruction of the septum following syphilis, and was shown principally in contrast to the first one.

SCLEROMA OF THE LARYNX.

The third case had been shown to the society before. He had worn a tracheotomy tube for two years, or may be longer, but within the last two or three months the tube had been removed, and the patient was getting along very nicely without it.

DEMONSTRATION OF GLASSES USED FOR THE OBSERVATION OF NYSTAGMUS.

Dr. J. Gordon Wilson showed the method he uses in observing nystagmus. He employs large frames like those used in automobile glasses. These frames cover the eyes and are opaque, except in the center, where there is placed a lens of eighteen or twenty diopters. It is essential that the sides and rims be opaque, to prevent observation of external objects. The patient cannot focus through these lenses. However, the observer can watch all eye movements, which are magnified. Bartels was the first to use glasses of this nature in a modified form. Dr. Wilson has found them of great value.

REPORT OF A CASE OF INTENSE VERTIGO RELIEVED BY PUNCTURE OF THE DURA IN THE NEIGHBORHOOD OF THE INTERNAL AUDITORY MEATUS.

Dr. L. W. Dean, Iowa City, Iowa, reported the case of a woman, aged fifty, married, who complained of stomach trouble, extreme vertigo and vomiting. Family history negative as to patient's trouble. Had had measles, smallpox and tonsillitis twice during last six years. Eighteen years ago had rheumatism, with swollen elbows, wrists, knees and ankles, and was in bed for six weeks. Since then has had insignificant pains in joints. No chronic cough. Before marriage was subject to asthmatic attacks. Married at twenty-two. Has had eight children, and one miscarriage after birth of last child. Menopause has not yet occurred. Has always had slight temporal headaches, beginning in the morning and lessening during the day. Never had any earache or discharge from either ear. At seven years was knocked unconscious, and immediately following was unable to hear, and remained deaf in both ears for about two years. Does not remember whether hearing was restored gradually or suddenly. Three and a half years ago noticed slight attacks of dizziness, and six months later vomiting was associated with these attacks, and at this time was also bothered by noises in the head. One year later hearing in right ear began to get poor. Attacks greatly increased in frequency and severity, until, on first observation, she had one or two a week, which required her to go to bed. Often fell during these attacks, but never became unconscious. Hard work in-

creased number of attacks. No pain about head preceding or during attacks.

Examination of general condition and of the nervous system negative, except for a distinct Romberg. Nothing about gastrointestinal tract that would be responsible for her vomiting.

Patient remained under observation in hospital from October 2 to December 26, the date of operation. Wassermanns made during this time negative. Influence of spinal puncture on attacks was marked, the vertigo and vomiting always being lessened, but never entirely controlled. During attacks there was a tendency to fall to the right. In earlier attacks a slight rotary nystagmus could be detected, which became more marked with succeeding attacks. Fields and fundi normal. No pain on pressure over mastoid region. For several weeks before operation complained of occasional attacks of pain in the occipital region. The diagnosis made before operation was a lesion in the posterior fossa.

Operation performed December 26, 1914, under ether anesthesia. Usual mastoid incision made, with posterior horizontal incision at right angles to it. Lateral sinus exposed and found to lie far forward near wall of the external auditory canal. Antrum opened and dura of the cerebellum exposed internal to ascending limb of lateral sinus. Dura painted with tincture of iodine and wound thoroughly dried. Vertical incision, half-inch long, made in dura, $\frac{3}{4}$ -inch internal to lateral sinus, at a distance of $\frac{3}{4}$ -inch below the knee. When dura was first incised there was but a slight flow of fluid, and brain substance prolapsed in the wound. About one-half minute after completion of incision it acted very much as if something broke, and clear fluid flowed from the wound with much force. About three and one-half test tubefuls escaped. Examination of fluid showed it to be apparently normal cerebrospinal fluid mixed with blood. Two days following operation patient complained of slight dizziness after first opening her eyes, which lasted only a few minutes. Slight rotary nystagmus to right. Three days after operation the nystagmus had entirely disappeared. Several times in the four days following operation the patient complained of attacks of nausea and dizziness, which were immediately relieved by dressing the wound, and at each dressing some cerebrospinal fluid escaped. On either day there was slight nausea and vomiting. A little rotary nystagmus to the right was also present at this time. Similar could not be disregarded and he agreed with Dr. Haseltine attack on ninth day, and after that recovery was uneventful. Hearing very slightly improved.

Findings at operation led Dr. Dean to think that his diagnosis of a collection of fluid in the cerebello-pontine angle, probably the result of adhesions between the meninges as a result of her injury forty-two years ago, was correct, notwithstanding the fact that an exact determination of the condition present could not be made.

DISCUSSION.

Dr. J. Gordon Wilson saw a case a few days ago in which he had operated twelve months ago for a cyst in the neigh-

hood of the internal auditory meatus. As in Dr. Dean's case, one of the most prominent symptoms was vertigo. After operation and relief of pressure the vertigo disappeared, and thus far has not returned. In such cases the etiology seems to be explained satisfactorily by the anatomical relations of the vestibular nerve. A process of the arachnoid space with the cerebrospinal fluid passes along the eighth nerve into the internal auditory meatus. It lies in close proximity to and is probably connected with the lateral foramen, which connects the fourth ventricle cerebrospinal space with the subcerebellar cerebrospinal space. Cysts in this region are usually connected with some faulty circulation of the cerebrospinal fluid, which may arise from a previous inflammation of the meninges, resulting in adhesions or from an injury to the skull; but in a certain number of cases there is no distinct history of damage. As a rule, immediate relief is obtained by opening the cyst, though the possibility of its refilling must not be overlooked.

Dr. George E. Shambaugh thought it was interesting that the disturbance produced apparently by pressure in the region of the vestibular tract in the cerebellum produces symptoms not very unlike those which arise from certain forms of labyrinth involvement. A labyrinthitis which does not result in a suppression of function gives rise to a nystagmus directed toward the affected side, apparently due to an increase in the labyrinth tonus. A labyrinth involvement which proceeds to a suppression of function results in a nystagmus directed toward the normal side, produced apparently by a suppression of tonus in the affected labyrinth. If the infectious process proceeds to an intracranial involvement, such as a collection of fluid in the region of the cerebello-pontine angle, a nystagmus is again produced, which is usually directed toward the affected side, just as if it might be due to an irritation of the trunk of the vestibular nerve; in other words, giving rise to exactly the same type of nystagmus as results from an irritation of the nerve endings in the semicircular canals.

Dr. Joseph C. Beck thought that the collection of fluid in the region suspected should have given Stellwag's symptoms, such as found in hysteria or tumors in the cerebello-pontine angle. In Dr. Dean's case the fields were normal, which was interesting, in contradistinction to the cases reported where there was such a large amount of fluid without locality. He asked Dr. Dean whether there were any optic disc changes, to which Dr. Dean replied that both fields and fundi were normal. The third point Dr. Beck wished to refer to was the question of pain and he asked Dr. Dean if there was much headache.

Dr. Dean said that just in the last few attacks there was a dull headache during the attacks in the region of the posterior fossa. There was no pain, however, on pressure over the opening of the mastoid vein.

Dr. Beck said it is claimed by Bruggiere that the only explanation of the absence of pain in a cyst or fluid accumulation which communicates with the spinal canal is that there occurs a sort of artificial syringomyelia, or spina bifida, and that, of course, Dr. Dean could not prove in his case, but that probably would explain why there was not more pain with such a large amount of fluid present.

Dr. J. Holinger referred to a case which he had reported at the International Congress in Boston which was practically identical with that reported by Dr. Dean, except that in the speaker's case there was severe headache from the start, which was constant. At the first operation quite a lot of fluid was discharged and the patient was improved for about three years. Then there was a recurrence of the trouble, and at the second operation, on opening up the first flap, the tumor appeared and burst, and it was then seen that the condition was an internal hydrocephalus. The patient did pretty well for several days, but then got worse and died. Dr. Holinger thinks that these differences in secretion of the cerebrospinal fluid are a chapter that otologists will have to help to solve. We cannot expect very much help from the nerve specialists.

Dr. J. R. Fletcher thought that perhaps there is some advantage in grouping these cases more or less. He cited a

case of Dr. Kahn's of a man who had received an injury to his head sixteen years before coming under observation, at which time hearing in the right ear was entirely lost, followed by a discharge. He latterly suffered from attacks consisting of the loss of his sense of strength; extreme dizziness and headaches. Further examination showed a depression of temperature, with lowering of the pulse. The only symptom of a cerebellar disease present was an exaggerated knee reflex on the same side. He had an exceedingly small, rapid, rotary nystagmus to the diseased side. There was pain on percussion over the area. Diagnosis of abscess in the speno-temporal fossa in the period of latency was made, that meaning, of course, a cyst. After doing a radical mastoid, which was necessary, Dr. Kahn punctured this area, aspirated it, and withdrew just exactly the same fluid as that described by Dr. Dean. The conclusion was arrived at that these attacks were due to hemorrhage into the cyst, which caused indirect pressure on the posterior fossa. The condition was proven out by a second operation, when the cyst was located and explored. The man has made a complete and absolute recovery, with the exception of the hearing.

It would seem, judging by the cases of Drs. Dean and Kahn, that the time is limitless during which these cysts may last. They may continue indefinitely if they have not become reinfected, which brings on again the manifest period of an old abscess.

THEORIES CONCERNING PARACUSIS WILLISSII.

Dr. George M. McBean said that from the variety of theories advanced since 1672 to explain this phenomenon, it is evident that there is room for at least one more. Our present conception of the movement of fluid, as a whole, in the semicircular canals, in order to make the nerve endings in the ampullæ capable of perceiving motion, must be comparable to the movement, as a whole, of the fluid in the spiral canals of the cochlea, in order to make the nerve endings there capable of perceiving sounds. But the fluid of the vestibular portion is only influenced by motion or position of the head, while the fluid in the cochlear canals is constantly being moved by the foot-plate of the stapes. The low-pitched sounds have the greatest amplitude of vibration. Even vibrations in the surrounding air too slow to be perceived by the human ear as sound may still have their influence in moving a normal stapedial foot-plate, and so keeping the cochlear lymph in constant motion. In otosclerosis producing ankylosis of the stapes the low-pitched sounds are lost, and therefore the greater the degree of ankylosis, the less movement of the fluid in the cochlea, as first pointed out by Toynbee. In the normal ear the function of the membrane of the fenestra rotunda is a passive rôle; it is only when the normal agent for producing motion in the cochlear fluids becomes ankylosed that the membrane of the round window assumes a more active rôle. But it requires a great stimulus to do this, vibrations of wide amplitude and great power, as the rolling of drums, the whirr of heavy machinery, the roar of a railroad train, or the rumble of a wagon, which cause such a commotion that the relatively lax membrane of the round window, and with it the cochlear lymph, move back and forth in something like their normal action. At the same time, the hair cells attached to the tectorial membrane, stimu-

lated by the ebbing and flowing lymph stream, resume their function as sound receivers, and so continue as long as the artificial mass motion continues. This is the paracusis which Willis described, and which has remained unexplained for two and one-half centuries, waiting for Shambaugh's theory of tone perception to unlock the door.

A necessary corollary of Dr. McBean's hypothesis, as given above, is that in cases of bony stapes ankylosis without paracusis Willisii, the process of spongification must have involved the recess of the fenestra rotunda, thereby preventing all mass motion of the cochlear lymph, and these cases would probably show a greater loss of upper tone limit.

DISCUSSION.

Dr. George E. Shambaugh said the facts regarding the phenomenon of paracusis Willisii are very definite. A person with normal hearing experiences some difficulty in hearing when in a noisy place; a person with nerve deafness finds increased difficulty under these circumstances, while, on the other hand, certain cases of deafness are very much better in a noisy place. In these cases the deafness is always due to fixation of the sound-conducting mechanism and the phenomenon is most marked where this fixation is most complete; that is, where there is bony ankylosis of the stapes. Two possible causes suggest themselves: (1) That the commotion produces a stimulation of the sound-perceiving apparatus, making it more sensitive than normal; (2) the commotion in some way improves the action of the sound-conducting mechanism. Dr. McBean accepts the first view, which may be the correct one, and yet it does not entirely explain all the phenomena; for instance, a person suffering from deafness due to fixation of the stapes will often hear much better on a moving train than a person with normal hearing. Another phenomenon in connection with these cases of paracusis is the prolongation of bone conduction. The explanation of prolonged bone conduction in obstructive middle ear deafness given by Bezold seems the most rational, namely, that all sound waves which are capable of perception must pass through the stapes. When the stapes hangs suspended from the oval window by its normal ligaments the impulses from a tuning fork placed on the skull are not transmitted as readily to the stapes as when this structure becomes more firmly adherent, either by bony or fibrous adhesions. Dr. Shambaugh cannot get away from the idea that the phenomenon of paracusis Willisii has perhaps more to do with the sound conduction than with sound perception.

Dr. J. Gordon Wilson thought the solution of the question of importance to otologists and must be based on physical laws of sound conduction. He was not convinced by the arguments of the essayist in regard to the cause. He did not see how the condition of paracusis could be explained by any mechanism in the cochlea. On the other hand, he believes the laws of acoustics can be applied so that paracusis Willisii may be explained by faults in the middle ear mechanism. It is worth while noting that not all errors in the conducting mechanism give the symptoms of paracusis. We do not get it in cases where the stapes is fixed by masses of bone lying in the oval fossa, nor do we find it if the middle ear be full of fluid. The popular idea with regard to paracusis is that a loud noise shakes and loosens the adhesions of the ossicles and to some extent enables the sound vibrations to go through with less friction. There is some basis of truth in this. In otosclerosis there occurs an inhibition or diminution in the amplitude of the movement of the stapes. Along with this we have a diminution in the hearing of low tones. On turning to the acoustic properties of sound waves one finds that in harmonic vibrations when mass and amplitude are fixed, the same energy may be obtained by high notes with small amplitude as can be obtained by low notes with great amplitude. When we pass from this relatively simple fact to the consideration of the superimposing of one sound wave on another, the subject becomes more

complex, but it is along these lines that Dr. Wilson believes the explanation of paracusis to lie. If when sound waves of low frequency are passing through ossicles which are restricted in their movements and there are superimposed on these sound waves of higher frequency, the latter will pass to the labyrinth with less loss of energy and therefore be better heard.

Dr. Robert Sonnenschein asked Dr. Wilson if the energy displayed by low tones of great amplitude is the same as that of high tones with a small amplitude. Why is it that a high-pitched tuning fork is heard better by air conduction than bone, as explained by Schaeffer and others as being due to the fact that the handle of the fork has a much smaller amplitude than the prongs? With the monochord the very high tones are heard better by bone than air conduction.

Dr. Wilson, replying to Dr. Sonnenschein, pointed out that what he had said had to do with conduction through the air and the ossicles. Conduction through bone was a separate problem, involving the question of resonance. He could offer no suggestions regarding the apparent anomaly presented by the monochord.

Dr. McBean, in closing the discussion, was glad Dr. Sonnenschein had brought up the subject of the monochord. At the present time he has a case under observation, diagnosed as otosclerosis several years ago, in whom the C_4 fork was short fifteen seconds in the right ear and twenty seconds short in the left ear, and yet he heard the monochord E_5 by air in the right ear and by bone F_7 . He heard an octave and a tone higher by bone in the right ear; in the left, D_5 by air and F_7 , an octave and two tones higher. It seems reasonable to suppose that the nerve is not degenerated at all, but merely out of function for the upper tone limit by air because of loss of mass vibration in the endolymph. Dr. Shambaugh spoke of patients with otosclerosis hearing better than normal people during a noise, as on a train, but the normal ear hears better in the quiet. That is the point the essayist wished to make, that a normal ear is overstimulated by the gross vibration, so does not hear so well, while the ear with stapes ankylosis has its lymph artificially vibrated into something approaching its normal condition.

THE POST-OPERATIVE ANTISEPTIC TREATMENT OF THE TONSILLAR FOSSÆ.

Dr. George Paull Marquis has frequently noticed a good deal of reaction along the pillars in the fossæ, and occasional edema of the uvula, soreness in the throat, difficulty in swallowing and impaired speech. There was a heavy fibrous exudate in the tonsillar fossæ, which persisted for from four to seven days. When this was removed with peroxide and then a five per cent solution of silver applied, the pain in swallowing was much less, and so he thought if that fibrous crust could be prevented from forming some of these difficulties could be avoided. He thought the edema and exudate must be called an infection. At no time is the mouth free from bacteria, and as soon as the tonsil is removed, there is an open surface for their invasion, where, through trauma, the most favorable conditions for their development are presented. If this surface is treated with a strong antiseptic, the infection is greatly lessened, and in some cases altogether prevented. Acting on this theory, he began applying a fifty per cent solution of tincture of iodine to the fossæ immediately after the removal of the tonsils. The result fully justified his action, for none of the symptoms mentioned above were present. It was noticed, however, that the membranes appeared to have been treated with an acid,

so in the next case the solution was reduced to twenty-five per cent, which he has used ever since. In employing this treatment it is necessary that all hemorrhage be controlled before applying the iodine, or it will simply be washed away and no effect produced by it. Therefore, he always has a tampon ready, about the size of the tonsil, saturated with alcohol. Immediately after enucleation of the tonsil he places this in the fossa, pressure is made for a couple of minutes, which usually prevents hemorrhage. If it does not, the pillar is extracted and the bleeding point grasped with a hemostat. The fossa is then painted with the iodine solution, and the same carried on to the pillars and uvula. There is almost no soreness the next day, but if there is, the same solution is applied. The greater number of patients in whom this treatment has been used have been children, but the results have been equally good in adults.

DE KALB COUNTY

The De Kalb County Medical Society met in De Kalb October 29, 1915. The meeting was called to order by the president, Dr. G. S. Culver, of Sandwich. The following members were present: C. E. Smith, M. C. Munn, L. E. Barton, R. G. Dakin, J. S. Rankin, C. B. Brown, J. A. Badgley, J. M. Everette, Paul E. N. Greeley, H. W. Twigger, C. F. Carr and J. B. Hagey.

Minutes of the meeting of May 7 read and approved. As this was the last meeting for 1915, the following officers were elected for 1916: President, Dr. L. E. Barton, Malta; vice-president, Dr. M. C. Munn, Sycamore; secretary and treasurer, Dr. J. B. Hagey, De Kalb.

Dr. R. G. Rankin, of Sandwich, was elected on Board of Censors to act for three years.

Dr. E. F. Dudley, of Sandwich, made application for membership. The president instructed the Board of Censors to report on the same at next meeting.

Dr. J. S. Rankin gave an interesting talk on the "Intra-spinal Use of Antitoxin in a Case of Tetanus" occurring weeks after the amputation of a limb.

Dr. Dakin, read an interesting paper on "Differential Diagnosis and Pathology of Some Diseases of the Stomach." The paper brought out a lively discussion by Doctors Brown, Barton and Everette.

Communications were read by the secretary, and the society adjourned to meet on the last Friday of January, 1916.

J. B. HAGEY, Secretary.

OGLE COUNTY.

Favored by the most beautiful autumn weather, the Ogle County Medical Society met at the Gem Theater in Mount Morris, Oct. 20. President Griffin presided. Twenty-two physicians, members and visitors, were present. Also the faculty and students of the college. Mr. James Minnick of Chicago, secretary of the Illinois State Association for the Prevention of Tuberculosis, gave an interesting and instructive talk on "Tuberculosis." Dr. Charles A. Elliott, of Chicago, gave a practical lecture on "Diagnosis and Treatment of Certain Stomach Troubles," illustrated with lantern

slides. The subject was ably discussed by Drs. Bushnell, Belvidere, Karcher and Murphy. Drs. Hedburg, of Lee, and Curtis of Maryland Station, were elected to membership. The society decided to hold a mid-winter meeting at Polo, if the weather is favorable. A vote of thanks was passed for Dr. Elliott, Mr. Minnick and the visitors. Adjourned.

J. T. KRETSINGER, Secretary.

STEPHENSON COUNTY.

Weather conditions, added to the fact that the roads were in fine condition, enabled a large number of doctors from Stephenson and adjoining counties to gather at Lena yesterday for the autumnal meeting of the Stephenson County Medical Society.

The first division had charge of the arrangements for the day. Dr. Allen Salter and his corps of assistants are to be congratulated for the delightful repast that was enjoyed at the noon hour. The ladies of the Eastern Star prepared and served the dinner.

Those present were the following: Drs. Charles A. Elliott and C. P. Horner, of Chicago; A. H. Beebe, of Stillman Valley; T. I. Packard, Lanark; U. S. Kellar, Warren; T. J. Stafford, Stockton; G. D. Runkle, Stockton; N. A. Kaa, Stockton; G. M. Tyrrell, Scales Mound, were guests of the society. Thirty-one members of Stephenson County Medical Society were present.

The talk given by Professor Elliott of Chicago, was well received and elicited considerable discussion. The other numbers on the program were of much merit and showed much thought in their preparation. All the papers were thoroughly discussed by the doctors.

The society voted to extend an invitation to the counties comprising the first councillor district to hold its proposed meeting of December next in the city of Freeport, and the secretary was to communicate with the councillor of the district, Dr. Emil Windmueller, of Woodstock, and ask that the meeting be held in Freeport. The doctors from the other counties joined in this request. The first district comprises the counties of Joe Daviess, Carroll, Ogle-Stephenson, De Kalb, Boone, McHenry, Kane and Winnebago.

J. SHELDON CLARK, Secretary.

ST. CLAIR COUNTY

The November meeting of the St. Clair County Medical Society was held at the Elks' Club, East St. Louis, on the 11th, the date having been changed to permit members to attend the meeting of the Southern Illinois Medical Association, which convened on our regular meeting day.

A proposition to increase the annual dues was discussed and on motion the dues for 1916 were made \$4.00.

Dr. S. V. Hoopman read a paper on "Medical Gynecology," which was full of good thoughts and was discussed by Drs. Auten, Lillie and State.

Dr. W. A. Dew presented a report on a case of "Leukemia," together with a short discussion of "Myelogenous Leukemia." This opened discussion by Dr. Auten, followed by Lillie, Fairbrother and Dr.

Florence Evans, the latter reporting on three cases recently under observation.

Dr. F. E. Auten talked on "Twenty Years in Medicine," presenting some very interesting facts, and insisting that the doctor should be a paid state officer; that "competitive" medicine was not conducive to the best interests of the people; that too much commercialism crept into the practice, especially in the surgical department. Exceptions were taken to the extreme views of Dr. Auten by Drs. State, Lillie and Fairbrother.

Additions to the membership were as follows: Drs. J. F. State, Henry D. Smith, John I. Higgs, R. X. McCracken, of East St. Louis, and Dr. E. Bollinger, of Dupon.

The Committee on Program and Membership are sending out the following:

REASONS FOR MEMBERSHIP IN THE COUNTY SOCIETY

1. The Medical Protective Feature. This feature is now in full operation, and gives equal protection with the medical protective companies which cost ten dollars per year. Any member against whom a suit for damage is brought, or threatened should at once notify State President C. W. Lillie.

2. This Society is the only avenue to membership in the State and National Medical Associations. Members of the County Society are members of the State Society.

3. Each member receives the Illinois State Medical Journal, which is well worth the cost of membership in the Society.

4. The publication of reports of our meetings in the State Journal places the profession of the county on the map of the medical profession in the State of Illinois.

5. Membership promotes a feeling of brotherhood and fraternity among members of the medical profession, and affords an opportunity of returning to the profession something of what we have received from it.

6. This membership gives a prestige, professional standing and political influence not only to the medical profession but in the esteem of the public.

Rule for attendance: "WHAT ALL SHOULD NOT DO ONE SHOULD NOT DO." If all should remain away there would be no Society.

H. C. FAIRBROTHER,

E. P. RAAB,

J. W. RENDLEMAN,

B. H. PORTUONDO,

C. W. LILLIE,

Com. on Prog. and Membership.

WINNEBAGO COUNTY

The Winnebago County Medical Society met at the Nelson Hotel, Rockford, Tuesday evening, November 9, with seventeen members present and three visitors. Dr. H. M. Starkey in the chair.

Drs. W. L. Hartman and C. H. Boswell, both of Rockford, were, upon approval by the censor committee, voted in as members of the society.

A letter from Dr. Windmueller, district councilor, in regard to a proposed joint meeting of this district to be held in Chicago in December, was read. The secretary was instructed to write Dr. Windmueller that the Winnebago County Society looked with favor on the joint meeting and hoped that as many as could would attend.

The president introduced Dr. V. D. Lespinasse of Wesley Hospital, Chicago, as speaker for the evening. He read a paper on "Hemorrhage and Transfusion" and illustrated his talk by charts. He also gave a short talk on "Sterility." Dr. Lespinasse based the facts he expounded on the results obtained from his own experimentations. Discussion followed. The society gave Dr. Lespinasse a rising vote of thanks for his illuminating address, and he was entered as an honorary member of the Winnebago County Medical Society. The meeting then adjourned.

DR. C. M. RANSEEN, Secretary.

WOODFORD COUNTY

The Woodford County Medical Society met in semi-annual session in the City Hall at Minonk, October 19, at ten o'clock a. m., with President F. W. Nickel in the chair. Members responding to roll call were Drs. J. Tweddale, R. M. Smith, F. W. Nickel, F. W. Wilcox, W. S. Morrison, J. I. Knoblauch, H. N. Barth, H. A. Millard. Those not members present: E. S. Gillespie of Wenona, councilor for this district; C. L. Boon of Washburn, W. D. Madison of Roanoke and P. M. Evans of Minonk.

The program for discussion was "Diphtheria and Tuberculosis." Diphtheria was considered before the noon hour. The profession of Minonk entertained the visiting doctors at luncheon at the Hotel Woodford and afterward to an automobile ride about the city. The subject of tuberculosis was then taken up for consideration in its different phases and the discussion enthusiastically entered into by all present. At four p. m. the meeting adjourned.

H. A. MILLARD, Secretary.

Personals

Drs. Duro Guca and Leo M. Czaja have returned after a year in Serbia.

Dr. Wilfred H. Gardner, Bloomington, is on duty in a British war hospital in London.

Dr. Oscar Dodd has been elected president of the Illinois Charitable Eye and Ear Infirmary.

Dr. W. F. Rainey and wife, of Salem, Ill., expect to return from the war area in France this month.

Dr. J. C. Helper, Woodriver, who a month ago was afflicted with anthrax, has been pronounced cured.

Dr. Barker Althunian, Joliet, sailed for Europe, November 3, to work with the Russian Red Cross.

Dr. Emmett A. Garrett has been appointed health commissioner of Peoria to succeed Dr. Edward Hasson.

Dr. Jabez D. Hammond, who has been ill at his home for several weeks, is reported to be improving.

Dr. Arthur Dean Bevan was elected president of the Clinical Surgical Society at Washington, D. C., Nov. 27.

Dr. C. St. Clair Drake, secretary of the State Board of Health, Springfield, has returned from a trip to the Pacific coast.

Dr. Thomas A. Hogan has been appointed a member of the staff of the dispensary of the Municipal Tuberculosis Sanatorium.

Dr. French S. Cary has been appointed assistant professor of urology and urological surgery, College of Medicine, University of Illinois.

Dr. William S. White, who was operated on at the Evanston hospital for appendicitis and the removal of gallstones, recently, is reported to be doing well.

Dr. Theodore B. Sachs has been reappointed a member of the board of trustees of the Municipal Tuberculosis Sanatorium and continues as director of the institute.

Thomas S. Hogan of Chicago has been appointed special state's attorney in Cook county to handle violations of the medical practice act prosecuted by the state of Illinois. Mr. Hogan held the appointment of official counsel to the State Board of Health until the position was abolished by a decision of the supreme court. The court decision, which in effect abolished the position held by Mr. Hogan with the state board, placed in jeopardy all pending prosecutions against quacks. The appointment had the approval of Governor Dunne.

—A citizen of La Salle has made a gift to the public library of \$10,000, the interest of which is to be used for buying medical books.

—"Old Doc Sweany" is said to be in bad with the Louisiana State Board of Health, whose officers were about two jumps behind him when he recently skipped out of New Orleans.

—The dope dispensers are having a hard time. Druggist Wm. E. Wallace, convicted of conspiracy for filling many of Blunt's prescriptions, was committed to Du Page county jail by Judge Landis, in the course of an investigation of perjury in the case.

—We have a circular, describing and announcing the building of a new Rest Cottage, for nutritional and hygienic treatments of patients suffering from nervous and mental disorders, by the Cincinnati Sanitarium. This is an old institution and this new building would indicate that the sanitarium is now giving a better service than ever. We wish it continued success.

—The post office sent the JOURNAL a change of address recently for one of our distinguished members from Chicago to (H) Evanston. We were not surprised at the change particularly, as the Doctor had the reputation of being an exceedingly good man. But as he died before the removal, we wondered how the post office managed to trace him. It is lucky that they did not trace him to (H) Elgin.

—November 21 about sixty Chicago street cars were put in service without windows to try out the demand for "fresh air" cars. It will remind the old timers of the grip cars that ran under the Yerkes regime. These cars will be an extreme change from the foul unventilated type that has prevailed. It may prove that neither kind is popular or necessary. In this matter as in many others "in medias res tutus est."

—Judge Landis recently sentenced Dr. Arthur L. Blunt to two years in the federal penitentiary at Leavenworth and fined him \$2,500 for conspiracy to violate the Harrison law. Wm. E. Wallace, the druggist who filled the prescriptions, was fined \$10,000 and sentenced to two years for conspiracy and five years on each of three other counts, the latter to run concurrently. These are said to be the first convictions of a

News Notes

—Do not forget to place Red Cross Seals on your Christmas packages and thus aid the war on tuberculosis.

licensed physician and registered druggist in this district under the Harrison law.

—At the thirty-seventh annual meeting and dinner of the Chicago Gynecological Society, held on October 15, the following officers were elected: President, Dr. Channing W. Barrett; first vice-president, Dr. Franklin H. Martin; second vice-president, Dr. Mark T. Goldstine; treasurer, Dr. Charles B. Reed; editor, Dr. W. A. N. Dorland; pathologist, Dr. Arthur H. Curtis; secretary, Dr. N. Sproat Heaney. The Chicago Gynecological Society holds regular meetings on the third Friday of every month in the Marshal Field annex building and will be pleased to have all interested attend.

—At the seventh annual meeting of the Illinois State Society for the Study and Prevention of Tuberculosis, held in Danville, October 22 and 23, the following officers were elected: President, Dr. George T. Palmer, Springfield; vice-presidents, Drs. Charles W. Lillie, East St. Louis, and Frank D. Rich, Joliet; treasurer, Mr. David R. Forgan, Chicago; and executive committee, Drs. James W. Pettit, Ottawa; Ethan A. Gray, Chicago; Theodore B. Sachs, Chicago; Lewis C. Taylor, Springfield; William A. Evans, Chicago; Mr. George W. Perkins, Chicago, and Mr. Herbert W. Mathews, Pekin.

—If every county medical society took as much interest in and did as much work for the prevention of tuberculosis as the Madison County Society, the tuberculosis death rate in Illinois would decrease very materially.

We note from the "*Madison County Doctor*" that Dr. E. W. Fiengenbaum was elected executive secretary of the Madison County Antituberculosis Society, which means that that society will accomplish results.

The same issue also publishes a full report of the work of Miss Grace Garrabrant, Community Nurse, which is of interest, especially to those counties having that kind of medical service.

—Friends of Dr. and Mrs. Robert B. Preble have undertaken to form a memorial fund for a philanthropic purpose, yet to be determined, to express their sorrow over the death of Mrs. Preble, and their sympathy for Dr. Preble and his family. Mrs. Preble had been actively interested in the work of raising funds for the Chicago

Collegiate Bureau of Occupations, a bureau which has for its object the securing of positions for women with college training, and was also interested in the philanthropic work of the Chicago Women's Club. Any wishing to assist in this work are invited to send checks or inquiries to Mrs. Charles L. Meeks, 5321 Greenwood Terrace.

—The semicentennial of Mary Thompson Hospital for Women and Children was celebrated from November 16 to 20. On November 16 a public meeting was held in the rooms of the Chicago Woman's Club, at which a history of the hospital was read by Miss Brayton, and addresses were made by Mrs. George Bass, president of the board of trustees; Mrs. Ella Flagg Young, Dr. Homer M. Thomas and others. On Wednesday a formal reception was given at the hospital at 6 p. m., in honor of the graduate and pupil nurses of the Training School for Nurses of the hospital. On Thursday evening a banquet was held at the La Salle hotel, and during the entire week special clinics were given by members of the staff at the hospital, from 8 a. m. to 5 p. m.

—The Institute of Medicine of Chicago, the purpose of which is stated to be the encouragement of the advancement of medical science, was organized formally at a dinner at the Hotel La Salle, November 5, which was attended by 150 charter members of the organization. The officers elected were as follows: President, Dr. William E. Quine; vice-president, Dr. Ludvig Hektoen; secretary, Dr. John G. Wilson; treasurer, Dr. J. A. Clapp; and board of governors, Dr. Frank Billings, chairman, William Allen Pusey, E. Fletcher Ingals, and William H. Wilder. The objects of the organization are similar to those of the College of Physicians of Philadelphia, the Academy of Medicine of New York City, the Boston Medical Library, etc. It will conflict with no other medical organization. One of the immediate objects will be the securing of a permanent home for the medical profession of Chicago and vicinity.

Marriages

SAMUEL D. ROSENTHAL, M. D., to Miss Tubie Greenspohn, both of Chicago, November 7.

CONSTANTINE THEODORE, M. D., to Miss Marion Cronin, both of Chicago, November 6.

WARREN E. BRADBURY, M. D., Clinton, Ill., to Miss Ida Brulle of Neillsville, Wis., October 26.

FREDERICK JOHNSON COREY, M. D., to Miss Ethel Henninger, both of Havana, Ill., October 6.

CONRAD B. VONNAHME, M. D., to Miss Mary Rung, both of East St. Louis, Ill., October 31.

LAWRENCE LESLIE IRWIN, M. D., to Miss Zona M. McDowell, both of Bloomington, Ill., October 10.

JAMES LEROY ANDERSON, M. D., Winfield, Ill., to Miss Clare Leland Kinney, at Chicago, October 14.

CLARENCE H. BOSWELL, M. D., Rockford, Ill., to Miss Ruth F. Ward of Flushing, N. Y., October 20.

ARTHUR KNOWLTON DRAKE, M. D., Monmouth, Ill., to Miss Lois Potter of Galesburg, Ill., October 19.

ALAN RICHARD WELCH, M. D., Smithfield, Ill., to Miss Mabel Lee Hinckle of Hinckle, Va., at Cuba, Ill., October 11.

Deaths

EMIL HAASS (years of practice, Illinois, 1878); aged 88; for sixty years a practitioner of Will county, Ill.; died at his home in Frankfort, Ill., October 13.

MATTHEW H. SHELDON, M. D. Eclectic Medical Institute, Cincinnati, 1876; aged 62; of Mt. Erie, Ill.; died in the Olney (Ill.) Sanitarium, September 17, from nephritis.

WILLIAM C. DAY, M. D. Missouri Medical College, St. Louis, 1871; aged 78 years; formerly a member of the Illinois State Medical Society; died at his home in Whitehall, November 13.

LOCKHART BROOKS FARRAR, M. D. Berkshire Medical College, Pittsfield, Mass., 1848; aged 93; for more than half a century a resident of Ford county, Ill.; died at his home in Paxton, October 30, from senile debility.

JOSEPH LESLIE (license, years of practice, Illinois, 1877); aged 77; a practitioner of Macon county, Ill., for forty-eight years; and until five years ago a practitioner of Elwin, Ill.; died at his home in Decatur, Ill., October 26.

BENJAMIN F. HALL, M. D. Louisville (Ky.) Medical College, 1877; aged 62; of Rock Island, Ill., and Davenport, Iowa; a specialist on diseases

of the eye, ear, nose and throat; died in the Augustana Hospital, Chicago, October 17.

HENRY P. MOWRY, M. D. Hahnemann Medical College, Chicago, 1877; aged 61; ex-president of the village of Bronson; formerly a member of the State Board of Charities and Correction; died at his home October 6, from angina pectoris.

GEORGE FRANK HARRIS (license Illinois), aged 96; a practitioner for seventy-five years; an honorary member of the Morgan County (Ill.) Medical Society; died at his summer home near Jacksonsville, Ill., August 9, from lobar pneumonia.

JOHN B. McDILL, M. D. Medical College of Ohio, Cincinnati, 1859; aged 81; formerly of Camp Grove, Ill.; assistant surgeon of the Sixty-Seventh Ohio Volunteer Infantry during the Civil war; died in the National Military Home, Danville, Ill., October 9, from arteriosclerosis.

WILLIAM M. JOHNSON, M. D. American Eclectic Medical College, Cincinnati, 1857; aged 86; a member of the Illinois State Medical Society, and president of the Wayne County Medical Society in 1910; for six years a resident of Johnsonville, Ill.; died at his home, August 13, from carcinoma.

ISAAC L. FIREBAUGH, M. D. Miami Medical College, Cincinnati, 1875; aged 68; of Robinson, Ill.; a Fellow of the American Medical Association; for many years a member and once president of the Æsculapian Society of the Wabash Valley; for forty years a practitioner of Robinson; died in the Presbyterian Hospital, Chicago, October 25, from cirrhosis of the liver.

Book Notices

VOLUME IV, NUMBER 5. THE CLINICS OF JOHN B. MURPHY, M. D., at Mercy Hospital, Chicago, October, 1915. Published Bi-Monthly by W. B. Saunders Company, Philadelphia and London. Price, per year, \$8.00.

The October number of Murphy's Clinics is full of interesting cases demonstrated in Murphy's usual manner. The clinical cases in this number are:

Carcinoma of Gum and of Submaxillary Lymph-nodes.

Carcinoma of Tongue and of Submaxillary Lymph-nodes.

Cicatrical Contracture of Neck Following a Burn. Recurrent Luxation of Humerus.

Subcoracoid Luxation of Head and Fracture of

Surgical Neck of Humerus.

Gunshot Wound of Arm.

Fracture of Humerus, Lower End.

Ununited Fracture of Internal Condyle of Humerus.

Ancient Fracture-luxation of Elbow-Joint.

Ancient Fracture of Elbow-Joint.

Fracture of Radius and Ulna.

Ancient Fracture of Radius and Ulna.

Empyema of Pleural Cavity.

Pericholecystic and Pericolonic Adhesions.

Tuberculosis of Fallopian Tubes.

Sarcoma of Ovary.

Pyonephrosis.

Urethral Calculus.

Retroperitoneal Sarcoma.

Inoperable Recurrent Carcinoma of Nasopharynx Involving Both Superior Maxille, Ethmoid, Frontal and Malar Bones—Injections of Mixed Toxins—disappearance of Neoplasm under Five Weeks of Treatment.

Metastatic Arthritis of Knee-Joint.

Ancient Infection of Hip-Joint.

Tuberculosis of Knee-Joint.

Painful Stumps of Legs—Reamputation—excision of Neuromata—Neurorrhaphy.

Painful Stump of Leg—Reamputation—excision of Neuromata—Neurorrhaphy. Thromboangitis Obliterans.

Pott's Fracture with Eversion Deformity.

THE MECHANISM OF IMMUNIZATION. By Henry Smith Williams, M. D., and James Wallace Beveridge, M. D., New York City, 25 East Sixtieth street, Copyright, 1915. Reprinted from American Medicine, October and November, 1914, Nos. 10 and 11, Vol. XX, Complete Series. Nos. 10 and 11, Vol. IX, New Series.

THE PRACTITIONER'S VISITING LIST FOR 1916. Four styles: weekly, monthly, perpetual, sixty-patient. Pocket size; substantially bound in leather with flap, pocket, etc.; \$1.25 net. Lea & Febiger, Publishers, Philadelphia and New York.

This Visiting List is issued in four styles to meet the requirements of every practitioner: "Weekly," dated for 30 patients; "Monthly," undated for 120 patients per month; "Perpetual," undated for 30 patients weekly per year, and "60 Patients," undated for 60 patients weekly per year.

THE PHYSICIAN'S VISITING LIST FOR 1916. Sixty-fifth Year of Its Publication. Philadelphia: P. Blakiston's Son & Co., 1012 Walnut Street. Sold by all Booksellers and Druggists. Price, Regular Edition, from \$1.25 to \$2.50, depending on size. Perpetual Edition, same as the Regular Edition, but without Dates, and with Special Memorandum Pages. Can be commenced at any time and used until full. Bound in handsome red leather.

For 1,300 names, interleaved, tucks, pocket, and pencil	\$1.25
For 2,600 names, interleaved, tucks, pocket and pencil	1.50

THE TUBERCULOSIS NURSE. HER FUNCTIONS AND HER QUALIFICATIONS. A Handbook for Practical Workers in the Tuberculosis Campaign. By Ellen N.

La Motte, R. N. Graduate of John Hopkins Hospital, Former Nurse in Chief of the Tuberculosis Division, Health Department of Baltimore. Introduction by Louis Hamman, M. D., Physician in Charge, Phipps Tuberculosis Dispensary, Johns Hopkins Hospital. Cloth Price, \$1.50. 292 pages, with illustrations. New York: G. P. Putnam's Sons, 1915.

Of all the phases of public health campaign in this country, the anti-tuberculosis campaign stands out most prominently, in its enthusiasm, perseverance, systematic planning and extensive organization mobilized in the comparatively short period of the last ten years. The national anti-tuberculosis machinery, growing from year to year, includes at present, over 1,200 local organizations, almost 600 institutions (hospitals, sanatoria, etc., with a capacity of 35,000 beds), 450 dispensaries, 400 open air schools, etc.

Guided by the experience, gained in this and other countries, the anti-tuberculosis effort of today is directed, on one hand, toward gradual realization of efficient, adequate institutional provision for segregation of advanced cases, and, on the other hand, toward extension and strengthening of the existing dispensary system (with its field medical and nursing services). The field tuberculosis nursing force, with its present enrollment of over 4,000 nurses in the entire country, is the fighting vanguard of the army, the guiding principle of which is prevention of spread of infection.

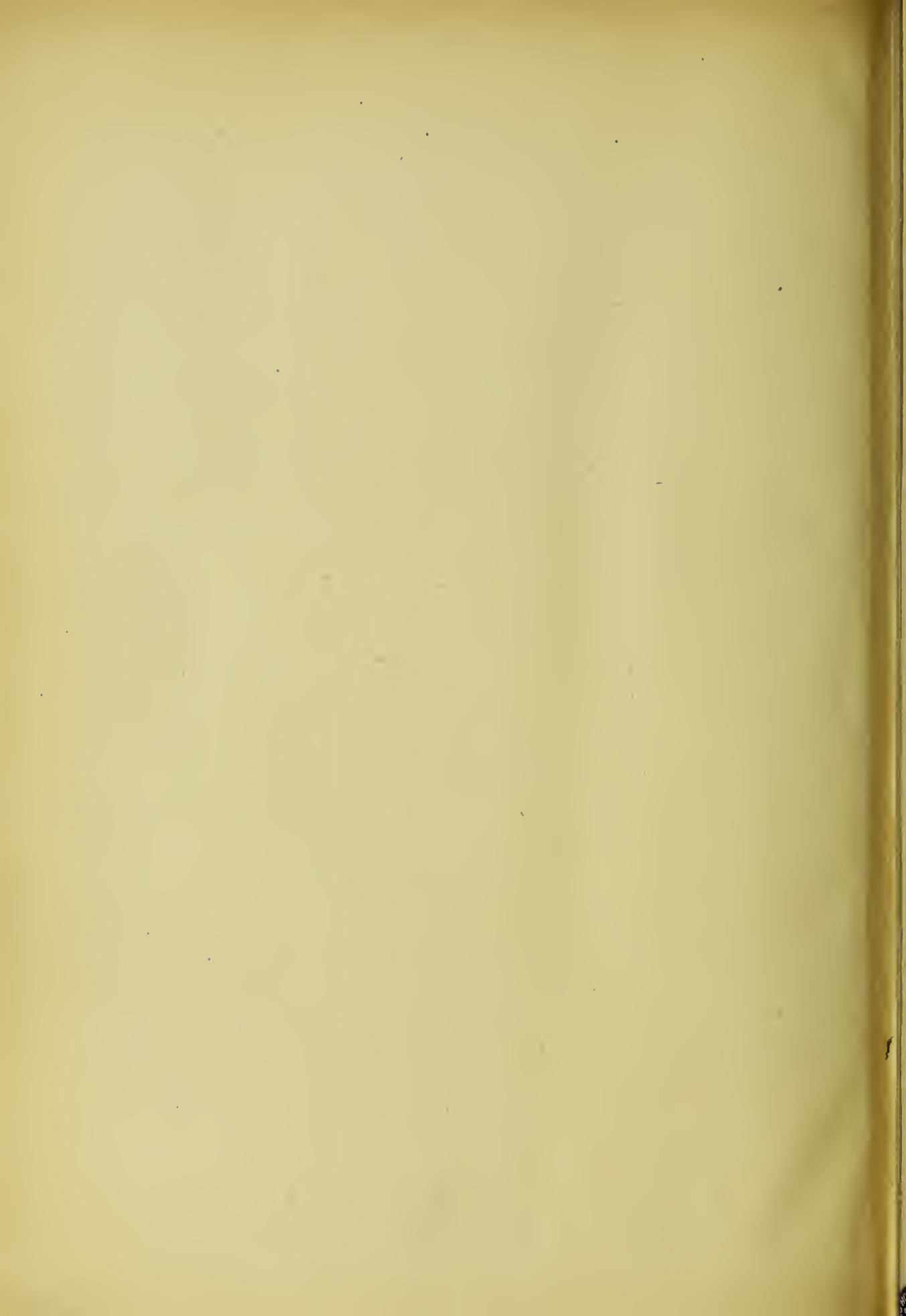
In her book ("The Tuberculosis Nurse," Her Function and Her Qualifications), Miss La Motte emphasizes to the nurses the guiding principle of their work—institutional segregation of advanced cases (home segregation of a large number of these cases, until adequate hospital provision for all such cases is obtained). Protection of the well members of the household is made the goal of the nurse's work.

The book analyzes very thoroughly all the important phases of the work of the tuberculosis nurse in the field such as her preparatory training, arrangement and details of home visits, nurse's records, "finding" patients, effective co-operation with the general practitioner, patient's quarters, care of the family, effective disinfection of premises, arrangement of the dispensary, co-operation with organizations and institutions, the problem of relief-giving, occupations of consumptives, effective municipal control of the disease.

The book will furnish valuable information, to all engaged in public health work.

Judgment formulated by extensive experience, a deep analysis of the various problems and a very clear presentation of the subject entitle this book to the place of a textbook for all field tuberculosis workers, nurses in particular.

REGULATION OF THE PRACTICE OF MEDICINE. A digest of the Case Law on the Statutory Regulation of the Practice of Medicine. Pound in legal buckram with stamped leather labels. Pp. 504. Size 6½x9½. Price \$6.00, postage prepaid. Compiled by the Medico-Legal Bureau of the American Medical Association, 535 North Dearborn street, Chicago.



41A211

